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PANCREATIC LYMPHANGITIS AND CHRONIC PANCREATITIS

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PHILADELPHIA

The most important subject which is occupying the attention of abdominal surgeons to-day has to do with the elucidation of the pathogenesis, the recognition of the symptoms and the discovery of adequate means of treatment of the diseases of the pancreas. It is but a short time since the pancreas was but little considered by the clinician or by the pathologist. Tumors, chiefly carcinoma, by their size or effect, occasionally thrust themselves into notice, and a few cases of marked pancreatitis, if acute, were recognized clinically and, if chronic, were noted in the archives of the pathologist. The majority of alterations in the pancreas were missed even by the pathologist, either because of lack of interest and care, or by reason of the rapid digestive process which takes place in the organ immediately after death, obscuring cellular and the less-marked architectural changes of pathologic origin. In the midst of the general apathy on the subject came the observations of surgeons that the pancreas was to be found in various states of enlargement, induration, distortion or contraction in many cases of upper abdominal disease.

Particularly was it observed in disease of the gall-bladder or common duct that the pancreas was apt to be involved. Thus, in ninety-nine cases of cholelithiasis in which I operated during 1911, the pancreas was found to be hard and nodular in thirty instances; in nine it was moderately enlarged, in three it was unusually soft and in one the lesion was more acute and accompanied by fat necrosis. In 45 per cent. of these cases, therefore, it appeared that some alteration of the pancreas had taken place.

While it is true that the pancreas is a firm and somewhat irregularly formed organ, still, making all due allowance for the personal equation in palpation, it must be apparent that the pancreas participates to a very marked degree in the inflammatory lesions of the biliary tract. We had previously been cognizant of the frequent association of gall-stones with acute pancreatitis through the masterly studies of Fitz, and by the observation of Opie we were made aware of the fact that the lodgment of a gall-stone in the papilla of Vater in such a way as to cause retrojection of bile into the pancreatic duct was followed by acute hemorrhagic pancreatitis. It seemed a natural inference that the pancreatic alterations associated with gall-bladder disease resulted from infection of the pancreas secondary to biliary infection and that the transference took place by way of the ducts, opportunity for which was provided by the usual junction of the two ducts to form the sinus of Vater.

There are certain objections to this easy explanation. In the first place, pancreatitis is more common in males, while, as is well known, gall-bladder disease is more common in females. This lack of parallelism arouses suspicion that pancreatitis must be due to other factors than the simple infection by continuity along the bile-ducts to the pancreatic duct, otherwise it would be difficult to explain why this should not take place as readily and as frequently in males as in females, the mechanism and anatomy of the parts being practically identical.

Again, the pancreas is often diseased without demonstrable disease of the biliary tract. In a series of cases which I analyzed with reference to this point, about one-third (36 per cent.) of all instances of chronic pancreatitis and 25 per cent. of the cases of acute pancreatitis were not accompanied by disease of the biliary apparatus. Desjardins attempts to explain ascending infection of the duct by assuming that the same infection gaining entrance into the ducts of the biliary or the pancreatic system may cause at one time cholangeitis and at another inflammation of the duct of Wirsung. This at present remains only an assumption.

There are three other possible avenues by which infection may reach the pancreas: (1) through the general circulation; (2) by direct contiguity from adjacent structures, and (3) by way of the lymphatics.

1. There is little or no evidence in favor of frequent infection by way of the systemic circulation. The rarity of pancreatic involvement in systemic and pyemic processes which are relatively so frequent speaks against this as a common mode of infection. Again, the conditions in which the pancreas is found involved are not characterized by bacteriemia, though it may occasionally occur.

2. Infections by direct contiguity occur most often in slowly perforating ulcers of the stomach and duodenum. These are seldom in evidence in pancreatic disease, and when they do occur the portion of pancreas affected is that in immediate contact with the adherent viscus, while the remainder of the organ, as a rule, escapes material injury.

3. The lymphatics, however, in my opinion play a conspicuous rôle in conveying infection to the pancreas. Dr. Pfeiffer and I[1] have pointed out that the pancreas by reason of its retroperitoneal situation bears a close relation to the thoracic duct and to many trunks which empty into it from the visceral lymphatics. Bartel had previously described and named a number of groups of lymph-nodes as the regional glands of the pancreas. Once he demonstrated by the injection method a direct communication between a pancreatic lymphatic and the lumbar trunk. Hoggan had previously shown a direct communication with the thoracic duct.

1. Pfeiffer and Deaver: Pancreatic Lymphangitis, Am. Jour. Med. Sc., 1912, cxliii, 473.

The technical difficulties of such researches are great, but enough has been done to show the existence of a richly anastomosing network of retroperitoneal lymphatics around and about the pancreas. Small nodes of lymphatic tissue have been demonstrated clustered about the head of the pancreas and applied immediately to its surface. Franks has shown that the lymphatics from the gall-bladder course immediately over the surface of the pancreas and then anastomose with the lymphatics of that organ. The lymphatics from the common duct, where it penetrates the head of the pancreas, must often of necessity traverse the substance of the pancreas. Bartel has shown the same direct relationship of the lymphatics of the duodenum and while the anatomic paths have not been directly demonstrated I have reason from clinical observation to believe that the lymphatics from the appendix pass upward and eventually are in close relation with the pancreas.

A brief outline of the following case will illustrate the influence which disease of the appendix may exert on the pancreas. Operation was performed for gangrenous appendicitis in a female child who had suffered with chills and high fever, the chills occurring two or three times in twenty-four hours. The appendix was removed. Chills and fever persisted and the child developed acute abdominal pain. A second operation was performed and a small abscess was found completely encapsulated in the mesentery of the ileum. Pancreatic lymphangitis was present, the pancreas itself being greatly edematous and infiltrated. Death occurred ten days after the second operation. Except for the condition of the pancreatic lymphangitic glands above referred to, no lesion was found in the abdomen at autopsy.

The following are brief notes of a case in which Dr. E. G. Alexander operated, in the service of Dr. H. C. Deaver, Episcopal Hospital:

Case 1.—Adult male, aged 23, suffering with acute appendicitis, chills and high fever. The appendix was removed; no pus and few adhesions were found. Seventeen days after operation the patient had a marked chill, was reoperated on and a large mesenteric abscess drained. Death occurred five months after the second operation. Pathologic diagnosis was multiple abscess of liver, chronic fibroid peritonitis, postoperative peritonitis in region of appendix, acute splenic congestion, acute parenchymatous nephritis, suppurative cholecystitis and abscess of the head of pancreas.

In these cases it appeared evident that the source of the peripancreatic and pancreatic inflammation was the infected appendix and that the path of metastasis was the retroperitoneal and the lymphatics along the cystic and common ducts.

It must be conceded that in many inflammatory conditions of the abdomen there is a retroperitoneal lymphangitis which is fraught with the possibilities of injury to the pancreas which lies almost directly in its path.

The pancreas, unlike certain other organs, possesses no great hilum through which pass the afferent and efferent blood- and lymph-vessels. The lymphatics emerge at various points along its surface and run to the regional glands, to neighboring trunks or plexuses. This arrangement leads to an important deduction. It has been observed in chronic pancreatitis associated with other visceral inflammations that the pancreas is often not diffusely affected but that only a portion of it will show enlargement, induration or nodulation. Thus in gall-bladder disease it is the head of the organ which participates most frequently, while the tail of the organ may entirely escape. If now, the infection were ductborne it is difficult to understand why the gland should not be diffusely affected, the infection following the ramifications of the ducts. If however, the infection be carried by the lymphatics it should be localized to the segment of the organ which is supplied by the lymphatics in communication with those carrying the infection. Thus, the irregular inflammatory swellings of the pancreas may be readily understood. It is conceded that this explanation implies that infection must stem the ordinary current of the lymph-flow in order to gain access to the organ, but this is by no means an infrequent observation in other portions of the body and need occasion no surprise here. Retrograde metastasis is a well-recognized occurrence.

Without being more dogmatic on the subject I feel certain that lymphatic infection of the pancreas is a fact and that this pancreatic lymphangitis, to use the term applied by Arnsperger, is a forerunner of serious alterations in the parenchyma and stroma of the organ.

Chronic pancreatitis, when it has progressed to the stage of interlobular and interacinar fibrous deposit, is no more curable than is cirrhosis of the liver or chronic nephritis. That pancreatic lymphangitis may lead to such a state is clear but in its incipiency before the sclerosing process has taken place the lymphangitis pancreatica may be relieved, like lymphangitis elsewhere, by removal of the primary source of infection. The swellings of the pancreas that are seen at operation in association with gall-bladder disease are not usually due to any permanent tissue deposit but to edema, congestion and perhaps absorbable cellular infiltrates. These are resorbed on subsidence of the exciting inflammation. I have on a number of occasions had the opportunity of examining at a later operation a pancreas which I had previously found to be enlarged and apparently the seat of a pancreatitis. In those cases in which the original cause was not still at work the pancreas has been found reduced to its normal size and consistency. This, it seems to me, can be explained only on the grounds that the permanent deposit of fibrous tissue, commonly described in the later stages of pancreatitis, had not taken place. The particular lesson to be gained is the curability of pancreatitis in its early stages and the prevention of at least a percentage of the advanced cases. The essential point in the treatment is to get rid of the foci of infection in the abdomen to which the pancreatic swelling is secondary.

It is impossible in the vast majority of cases to say prior to operation whether or not the pancreas is involved. Not only are the essential symptoms of pancreatitis indefinite but the frequent association of pancreatitis with other abdominal lesions adds complexity that has so far foiled any attempt to formulate a clear-cut syndrome of early pancreatitis by means of which it may be recognized or suspected. As a rule, it may be stated that the symptoms of pancreatitis, *per se*, in its early stages are secondary in importance to those of the disease on which it is dependent. Exception must be made of those cases in which jaundice is a marked symptom due to pressure of the enlarged gland on the common duct, but even in these cases the cause of the obstruction cannot be settled except by operation and direct inspection. Chronic pancreatitis possesses in common with chronic gastric, duodenal and biliary disease the property of exciting more or less epigastric discomfort, distress or pain which may radiate to the hypochondria or to the back. Nausea or vomiting also are caused by some cases of pancreatic disease. The cause of our difficulty in recognizing pancreatic dis-

ease is to be found in the absence of definite physical signs and our inability to recognize slight functional derangements of the organ. When the disease is well marked we may at times succeed in palpating a swollen indurated pancreas and when function has been so greatly disturbed as to produce insufficiency of the important digestive enzymes furnished by the pancreas we can demonstrate absence of the ferments in the feces, in the duodenal contents or observe its effects in the large bulky stools containing large amounts of undigested nitrogenous and fatty materials. When the islands of Langerhans are extensively diseased glycosuria is an accompaniment that is easy to recognize. These and other signs and symptoms that might be mentioned are interesting from the biologic and physiologic point of view but to the clinician striving to ameliorate and prevent disease they are of little importance, as they come too late to enable us to treat the condition with success. The Cammidge reaction which promised much as an early test of pancreatitis has in my hands, I am sorry to say after an extensive experience, given me little or no aid.

It may not be out of place here to record my belief that carcinoma of the pancreas is in many instances brought into existence by previous pancreatitis. This is in line with the known fact that chronic irritation predisposes to cancer as is seen in "chimney-sweep" cancer, "pipe" cancer of the lip, ulcus carcinomatosum of the stomach, cancer of the gall-bladder with gall-stones and many other forms of the disease elsewhere. The reason for this belief is my observation that not a few cases of cancer of the pancreas present a long history of antecedent upper abdominal indigestion that suggests pancreatic inflammation prior to the development of carcinoma. The following will serve to illustrate:

CASE 2.—Mrs. E. W., aged 43, had suffered for years with upper abdominal indigestion. About nine months before admission to the hospital she began to suffer severely from pain in the epigastrium, which was intensified by eating. Nausea, constipation and eructation of gas, coated tongue, foul breath and loss of weight and strength finally brought her to operation. She was never jaundiced. At operation there was diffuse enlargement of the pancreas with softening of the body of the organ. Incision showed the tissue to be necrotic. Portions were removed for examination by the pathologist, who reported as follows: The specimen consists of chronic inflammatory tissue infiltrated with adenocarcinoma and showing at several points small lymph-nodes consisting of single follicles with a mantle of lymphocytes. The gall-bladder in this case was thickened and showed evidence of previous chronic inflammation. The chain of events in this case, chronic indigestion, the evidence of chronic inflammation involving the gall-bladder and pancreas and the later development of carcinoma of the pancreas, is at least suggestive. The patient made an operative recovery, but has since died of the disease.

The treatment of pancreatic lymphangitis consists in the various measures which are efficacious in removing the primary source of infection. In one case the removal of a chronically diseased appendix may be indicated. In another, appropriate treatment for gastroduodenal catarrh or duodenal ulceration. Clinical experience, however, shows that the majority of cases of early pancreatic inflammation are closely related to disease of the biliary tract and are most favorably influenced by the measures that tend to restore the biliary passages to a state of health. The great principle of the treatment of biliary disease is drainage. It is the gall-bladder which is most commonly affected by inflammation. Here we have to deal with an organ which is subject to alternate distention and contraction of its muscular walls, a condition which, as emphasized by the urinary bladder, is most unfavorable for getting rid of infection, inasmuch as its physiologic activity prevents complete rest. In addition to this the gall-bladder possesses a mucosa which offers many nooks and crevices in which infection may lie latent. Foreign bodies in the shape of gall-stones frequently complicate the situation and add continued irritation. The sterilization of the gall-bladder, once it has become infected, may be accomplished by the body with the assistance of medical treatment, although this means cannot be relied on. Drainage of the gall-bladder by cholecystostomy will always enable the body to throw off the infection. The principles are rest and drainage, as old as surgery and as efficacious as any means ever devised in the treatment of infection. Gall-bladder drainage is the sheet anchor in the treatment of pancreatitis. Not only is the gall-bladder sterilized by cholecystostomy but the catarrhal cholangeitis of the common and hepatic and lesser ducts, which frequently accompanies gall-bladder disease, is also relieved. Many cases of mild pancreatitis are completely and permanently relieved by simple cholecystostomy with drainage continued for from four to eight weeks. This is the procedure which I use and endorse in all cases in which the pancreas appears to be slightly involved and the possibility of restoring the gall-bladder to a state of health appears good. The decision is in a large degree a matter of surgical judgment. In the presence of the ordinary indications for cholecystectomy the gall-bladder should be removed and drainage instituted by choledochostomy.

While I am not in favor, as a general rule, of removing the gall-bladder if it can be preserved, yet in cases complicated by pancreatitis I believe that a thickened functionless gall-bladder should be removed, as its presence invites stagnation of bile, renewed infection and a reappearance of upper abdominal lymphangitis. When biliary catarrh and pancreatitis have become securely lodged in those organs and marked alterations of structure have appeared, temporary drainage of the biliary tract is often insufficient to insure permanent recovery and relapses are frequent. In such cases permanent drainage of the gall-bladder must be considered and this is done frequently by cholecystoduodenostomy. This is not an operation for the novice and should not be attempted by anyone not thoroughly familiar with its technic. As I have said before, temporary drainage often is curative in a surprising manner and it is better to take the chance of recurrence and the possibility of a second operation than to expose the patient to increased risks, for two operations on a living patient are better than one thorough and "successful" operation after which the patient dies. With this proviso, there is still a field for cholecystoduodenostomy and I favor it in cases of marked swelling of the head of the pancreas, especially when jaundice is a prominent feature of the disease. It is worthy of remark that even cholecystoduodenostomy does not insure permanent drainage of the gall-bladder, for I have had occasion to reopen the abdomen in cases in which I had previously performed this operation and in some instances have found the opening completely obliterated. Occasionally the gall-bladder will even succeed in detaching itself from the duodenum. This doubtless comes about in very much the same way as exemplified by the closure of a gastroenterostomy after the condition for which it was performed had been alleviated and the pyloric function

resumed, thus throwing the new opening into disuse and permitting contraction of its lumen. That such a closure should occur is usually evidence that the need for the anastomosis has vanished.

Another point to be observed in all cases in which jaundice is a feature of pancreatitis is the opening of the common duct and the passage of a sufficiently large probe into the duodenum to secure full dilatation of the duct and the opening of the papilla of Vater. Jaundice in pancreatitis is usually accounted for by the pressure of the pancreatic tissue on the common duct where it courses through the head of the pancreas, as it does in about two-thirds of the cases. I am not at all sure, however, that spastic or cicatricial contraction of the sphincter of the papilla may not play a part in some cases. It is at times rather difficult to force the sphincter with a large probe, which suggests the possibility of cicatrix or sphincterismus of which we see analogies at other orifices of the body which are guarded by sphincters.

In conclusion, I would repeat that pancreatitis must still be studied with an open mind in regard to its etiology and particularly in respect to its relation to chronic inflammatory diseases of the alimentary tract that result in retroperitoneal lymphangitis; that treatment is promising in the early stages and practically hopeless when the stage of interstitial deposit of fibrous tissue is reached; that our most promising lead for treatment consists in the means already devised for the treatment of chronic inflammation in the organs with which pancreatitis is commonly associated and on which it appears to be dependent; finally, that pancreatitis is common and not rare, that its presence should be suspected in all cases of obscure upper abdominal indigestion and that like other chronic inflammatory lesions of the abdomen when it is uninfluenced in a reasonable length of time by medical measures it should receive surgical attention along the lines here proposed.

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MODERATE DEGREES OF PELVIC CONTRACTION AND THEIR OBSTETRIC PROBLEMS

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While it may be true that the management of normal labor demands but little knowledge of obstetrics, and that childbirth under most circumstances will terminate favorably, it is unquestionably true that only a good knowledge of obstetrics will qualify a physician to meet successfully the difficulties which arise from time to time in the practice of this specialty. Indeed, thanks to modern surgery, our art has developed to a degree at which no condition contingent on gestation or parturition may occur which has no remedy. I do not say that the right thing is always done, or that any of us is so skilful as never to fail, but I do insist that every pregnant woman may reasonably expect to bring forth a live child. Perhaps I should qualify this statement to read: every woman pregnant with a viable child.

Marked contractions of the pelvis have clearly indicated but one alternative—cesarean section. The lesser and more moderate degrees puzzle the obstetrician greatly and not all are agreed what should be done in these border-line cases. Occasionally success follows the use of forceps, and a living child is dragged through a cramped pelvis. Instances are not rare, however, in which such births are accompanied by permanent injury to the child and even death after a few days.

With the exaggerated degrees of pelvic contraction there is no dispute as to what must be done in order that a child may have a chance for life; but in case of a generally contracted, or a simple flat pelvis, we are somewhat unsettled as to whether labor shall be induced a few weeks before term, the forceps relied on, pubiotomy performed or the abdominal section made. Craniotomy has in the past bid for its share of consideration, and under urgent circumstances may still have a place in our art; but when reasonable facilities are at hand for doing clean surgery, and capable surgeons are available, it should never be necessary. I shudder every time I think of the occasion when I was prevailed on to perforate a child's head because its father would not submit his wife to cesarean section, and I vowed never again to be party to such a crime.

The difficulty then is not so much in dealing with a marked deformity, such as a contraction of the true conjugate to 7 cm., for in these we must make the cesarean section if we hope to deliver a live child, but when the true conjugate measures 9.5 cm. we may easily err in a choice of methods. In such instances obstetrics ceases to be an exact science.

There are so many things to take into consideration that one must possess rare judgment and great experience to say which of the various methods of delivery shall be followed in a given case. It is quite obvious that close observation and careful calculations, measurements and planning enable one to follow a more intelligent course than if these are neglected. If the patient is seen for the first time after she has fallen in labor, or perhaps after repeated vaginal examinations by some one as to whose surgical asepsis there is uncertainty, the obstetrician will be handicapped. He must take into consideration the possibility of infection, no matter what measures are adopted, and also the question of maternal exhaustion, loss of blood and injury to the fetus. Schauta makes it a rule to wait two days before performing abdominal section on a woman who comes to the clinic after having been examined by a midwife.

If one attempts to learn from statistics the frequency of pelvic deformity one will find wide variations in the statements made. This is probably due to inaccuracy or rather the lack of uniformity in methods of estimating the size of the pelvis.

For purposes of convenience pelvic contractions are divided into two degrees, the absolute and the relative; and since the former contemplates one of two things, therapeutic abortion or cesarean section at term, I shall speak only of the latter, the relative.

With 7 cm., true conjugate, as the dividing-line, it was found in the Vienna clinic that no spontaneous births took place in a contraction of this degree, and that intervention was required in 85 per cent. of those having a true conjugate of 7.5 cm.; 75 per cent. having 8 cm.; 50.3 per cent. having 9 cm., and 24.4 per cent. having a true conjugate of 9.5 cm.

Every pregnancy complicated by a contracted pelvis is a law unto itself, demanding its own particular consideration. The maneuvers and operations made use of are well known, but when and why one procedure is better than another is a problem that cannot be answered dogmatically. I shall endeavor to show what seems to be a rational course to pursue and cite a number of cases from my own practice.

First I assure myself as well as I can whether or not the pelvic measurements are ample, perhaps going over them more than once if I am in doubt. Should there be any marked variation in the ratio between the three transverse external measurements—interspinous, 26 cm., intercristal, 29 cm., and intertrochanteric, 31 cm.—I go over the pelvis with more detail and note especially whether the internal conjugate is foreshortened. This is easy of estimation by the usual bimanual examination. If I succeed with two fingers in reaching the promontory at all I know that I have some degree of contraction to deal with. From practice I believe I can by this method almost say in centimeters what the true conjugate measures without the further necessity of instrumental pelvimetry; but I believe in more exact methods and often verify the simpler examinations by means of the various mechanical devices. By whatever means the diameter may be determined, if the true conjugate be found to measure as low as 8 cm. or even as high as 10 cm., I prepare for trouble.

The next thing to take into consideration is the size of the baby's head, which is still more difficult to measure than the mother's pelvis. Having concluded that it is of average size, one must go still further and be able to predict the degree of molding that will be possible; also the strength of the patient, and if she is likely to have strong uterine contractions. Of course if the head is engaged or can be made to engage one need not be greatly concerned about diameters. The sort of cases embraced in this discussion are those in which the head overrides the symphysis, and the question is, Will the natural forces be competent to deliver? If not, what shall be done?

If one sees these cases of pelvic contraction early enough something may be done to influence the growth of the child *in utero* by means of the diet recommended by Prochownik.[1]

My own experience with the induction of premature delivery has been most satisfactory, and of the half-dozen or more cases that I have undertaken only one resulted disastrously. Even in this instance the child was born alive, but died later from the injuries sustained in the process. As an illustration of its advantages, the following history is given of a woman whose pelvic diameters were moderately cramped:

CASE 1.—The patient, aged 29, was the mother of two children, the first of whom was delivered by forceps and with great difficulty; the other, a small child, was born unaided. The history of my first experience with her was something like this: A physician who was called to attend her in her third labor began at once to deliver with instruments. Failing in his efforts, he called on a confrère, and together they made several futile attempts to bring away the child. About midnight they sent her to the city hospital, and I was called to see her. From the instrumental manipulations at her home much blood must have been lost for she swooned on reaching the hospital. Version was performed and the patient delivered of a dead child without great difficulty. Here was a woman with a history of a previous hard labor, whose external conjugate measured 18 cm. The disproportion between the fetus and the pelvic inlet was not great, yet a life was sacrificed because the right thing was not done. The same patient came under my care within a year and I have the following notes of her fourth delivery:

She went to the hospital on March 24. The same afternoon I passed a bougie into the uterus and packed the vagina. About all this served to do was to excite uterine discomfort. After thirty-six hours the bougie and packing were removed, the vagina cleansed and with the Leavitt dilator the cervix was dilated to the size of a silver dollar, and packed with gauze. Uterine contractions began soon afterward and continued most of the night, but quieted down by morning. For the next thirty hours the patient was comfortable. The presenting part refused to engage. At 9 o'clock in the morning of the 28th I again employed the dilator and opened the cervix to the size of my hand, ruptured the sac, made a high application with the axis-traction forceps, pulled the head well into the inlet, and left labor to go on spontaneously. Uterine contractions soon ceased. At eleven I ordered 10 grains of quinin, the dose to be repeated in one hour. Labor pains began shortly after the first dose, and when I examined the patient at 2 o'clock the head was engaged and the cervix well dilated. A live baby was born two hours later.

The following case turned out equally well but was managed altogether differently:

CASE 2.—The patient, first seen August 1, was pregnant for the third time. The former labors were difficult; the first one resulted in the birth of a dead child; the second child was born alive but died after three days from the injuries it received at birth. Both babies were said to be large, especially their heads. Pelvimetry did not reveal any marked contraction, and at the time of examination I rather thought she would be able to deliver herself at the end of term. She was taken in labor on the afternoon of August 30. The first stage was normal, the amniotic sac rupturing about 9 p. m.—at least I judged so from the patient's account, though I did not see her till 10 p. m. At this time the cervix was fully dilated. The head was not engaged. I remained with her until 3 a. m., making an occasional examination to ascertain if the head was beginning to engage. The conditions remained the same as when I first saw her in the evening, except that she was more fatigued. At no time were the pains very strong.

At 3 a. m. I insisted on her going to the hospital, where I made a reasonable effort to deliver with the axis-traction forceps. Failing, I informed the husband that one of three things would have to be done, and explained to him briefly the operations of pubiotomy, craniotomy and cesarean section. My preference in this instance was pubiotomy, neither of us being willing to sacrifice the life of the child deliberately. He gave his consent and we prepared the woman in another part of the hospital for the operation.

A Doederlein needle was passed subcutaneously from below and about three-fourths of an inch to the right of the symphysis, making its exit close to the bone, a Gigli saw was drawn through and the pelvis separated without other difficulty than the breaking of two saws that I brought from Vienna. Fortunately we had others at the hospital. There was considerable hemorrhage, owing to the necessity of passing the needle several times, and the breaking of the saws. Traction forceps were applied and the baby delivered without much effort. It did not cry or breathe. As soon as I could leave the mother I began resuscitative measures of a vigorous sort, and, though I despaired of bringing him to life, we were finally successful in awakening another boy to the tribulations of this vainglorious world. The mother's thighs were strapped with adhesive plaster. Recovery was rapid, bony union taking place promptly. At the end of two weeks the patient was able to walk and has suffered absolutely no inconvenience from the severance of the pelvis. At this time, one year after, both are well.

A third case was handled successfully by cesarean section:

CASE 3.—This young woman evidently went over term. She had been under observation for some months at the university hospital, and we were apprehensive of trouble. For eighteen hours she was in hard labor. The position of the fetus was most favorable, and the patient was strong. While the true conjugate was of the moderate degree of contraction, it was

1. Breakfast: A small cup of black coffee, 100 c.c.; zwieback, or bread with a little butter, 200 gm. Luncheon: Any kind of meat or fish, eggs, green vegetables, salad, cheese. Dinner: Same as luncheon, with addition of bread and butter, 30 to 50 gm. Fluids: As much per day as a pint of water, or of red or Moselle wine if the patient is accustomed to the use of wines. See fuller discussion of this diet in THE JOURNAL A. M. A., Oct. 28, 1911, p. 1174.

thought best to let her try to deliver herself. Her efforts were futile, however, the presenting part refusing to engage. In this case no attempts were made to deliver with forceps, and but one vaginal examination was made during labor. My judgment prompted me to make the cesarean section.

To illustrate still another way of attacking a labor complicated by a moderate degree of pelvic contraction:

CASE 4.—A young primipara with a true conjugate of 8.5 cm. was sent to St. Luke's Hospital on the first signs of labor and without delay submitted to cesarean section. Her recovery was as uneventful as a normal labor. Besides, she was spared many hours of useless pain. To have her baby was about as much of an ordeal as a simple appendectomy.

Here are pictured the three or four methods of dealing with a relative deformity of the pelvis. Which is the best? Which is the safest for both mother and child? Why not induce premature labor? Why not separate the pubic bones? Why not deliver through the abdominal wall? These are questions which I, at least, cannot answer definitely and conclusively, so much depends.

If time permitted I should enjoy a discussion as to the advantages of the various procedures touched on, but will content myself by saying that personally I prefer the scalpel if the pelvic diameters make one or the other operation necessary. At any rate I will say that not a life has been lost in four recent cases in which I have performed cesarean section, which is better than can be said of the last four deliveries made by the high application of forceps.

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THE CONTROL OF TYPHOID INFECTION

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The typhoid problem in Wilmington as elsewhere is occasioned by the exposure of infected feces to flies, and by the pollution of the soil and water. In rural districts, towns and small cities where the use of the sewer is limited or does not exist, it is obvious that the first attempt at typhoid control must be directed toward the sanitary disposal of human excreta, more especially that of typhoid patients.

In the absence of a system of sewers the sanitary disposal of excreta is not so simple as it would at first appear. All forms of the sanitary privy are open to objections and most of these objections are easily magnified by property owners who desire to avoid expense and citizens who are unwilling to complicate their manner of living. The ordinary open surface-privy appeals strongly to the ignorant because all fluids are readily absorbed by the earth and the solids when unconfined rapidly become inoffensive. The sanitary closet, if not cared for properly, soon becomes offensive, and this is a powerful factor in the creation and continuation of the objection to its use.

There were more than five thousand surface-privies in Wilmington at the beginning of June, 1911. The death records of the health office furnished conclusive evidence that typhoid fever had been endemic for a great number of years. An estimate of the number of cases occurring each year made from the number of deaths from this cause shows an average for the five years preceding 1911 of two hundred cases each year, and the time of greatest frequency invariably occurred during the summer months, which indicated fly-borne infection.

The inauguration of the new health department in Wilmington, June 1, 1911, occurred while a rapidly spreading epidemic of typhoid was in progress. Our first efforts were directed to the destruction of the fly which was obviously the means of transmitting this disease. Along with this went the effort to introduce the sanitary privy. All surface-privies, manure-heaps and places in which flies could breed and feed were repeatedly saturated with pyroligneous acid. The result of this procedure was a prompt checking of the spread of the epidemic. This work was done at the expense of the municipality.

The introduction of the sanitary privy was strongly opposed. Property owners objected to the expense and those who made use of the sanitary privy and who neglected its care complained widely of its offensiveness. This opposition was strong enough to interfere with the enforcement of the sanitary closet ordinance to such an extent that at the beginning of the summer of 1912 there were remaining in the city nearly three thousand surface-privies. Many of the sanitary privies which had been installed were not made fly-proof as required by the law. This condition of affairs practically insured a repetition of the annual epidemic of typhoid. The council failed to furnish funds for the use of pyroligneous acid and it was certain that no funds would be furnished unless pronounced epidemic conditions appeared. We determined if possible to prevent the recurrence of the epidemic which had been so long a fixture in this community and to that end adopted the following plan:

Each sanitary closet-can, when removed for cleaning, was thoroughly scrubbed and disinfected, and before being replaced in a closet was filled to one-third of its capacity with a disinfecting solution of known typhoid bactericidal efficiency. In addition a circular letter was addressed to every physician in the city requesting him to notify the health office as soon as the symptoms in any suspected patient suggested typhoid, and to use every means in his power to secure the screening of the patient and the disinfection of all excreta. The health office agreed immediately on notification to cooperate with the physician in his efforts to render the case innocuous. To prevent any typhoid excreta from going through the sewers into the Cape Fear River the health office was to supply every household in which there was a case of typhoid with a steel can in which the excreta from the patient might be kept and disinfected.

This plan went into immediate effect and since May 1 it has been in continuous operation. Both physicians and citizens cooperated fully and the results have been extremely gratifying. As soon as a suspected case of typhoid fever is reported a galvanized steel can of 12½ gallons capacity, containing 3 gallons of disinfecting solution and supplied with a tight lid, is sent to the house of the patient. An extra quantity of disinfectant is supplied for the disinfection of bed linen and clothing. Another can is provided, if desired, for use in disinfecting these articles. The can containing the disinfected excreta is placed in an out-building, kept tightly closed at all times, and is removed, cleaned and redisinfected as often as is necessary, without cost to the citizens. New cans are furnished for every exchange in order to prevent the possibility of offense which might be occasioned by the use of a previously used can. As a result of our efforts we recorded during the month of May, 1912, but 6 cases of typhoid fever; in June, 20 cases; in July, 10 cases; in August, 12 cases, and in September, 11 cases. During the same period in 1911,

250 new cases were reported. Recognizing the fact that the excreta of the typhoid case constitute practically the only means of transmitting this disease, and realizing that from the great number of typhoid cases which have occurred in this city each year for many years past there must be a number of typhoid carriers in this community (it is obvious that our plan of prevention could not reach these), we must conclude from the results that infection from current cases has been prevented to a very gratifying degree.

Typhoid is essentially a disease of the rural districts, small towns, and small cities where human excrement is not immediately conveyed beyond the limits of infection possibility through sewers, and where thorough disinfection of typhoid excreta is least likely to be practiced. The plan we have used cannot be carried out successfully where the population is so concentrated and numerous as in the larger cities. Thus the disease and this plan of prevention seem eminently suited to each other.

UNUSUAL EXPOSURE TO LIGHT FOLLOWED BY SEBORRHEIC KERATOSIS

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Seborrheic keratosis is a common cutaneous disease which most frequently occurs in elderly people, and especially, as its name implies, in those who have a seborrheic skin. Light, especially the actinic rays of light, is now considered to be in many cases the exciting cause of the trouble. There is no direct evidence in support of this view, but there are a number of phenomena difficult to interpret in any other way:

1. Patches of seborrheic keratosis begin very frequently as small pigmented spots, and the formation of pigment is a well-known effect of the action of light.

2. Seborrheic patches occur most commonly and most profusely in persons exposed to light.

3. They appear almost exclusively on the exposed surfaces of the face, ears, neck and back of the hands, and the lesions, as a whole, are analogous to those of xeroderma pigmentosum, a disease in which light is known to be the exciting cause.

4. Furthermore, chronic dermatitis from prolonged exposure to *x*-rays, which are particularly actinic, presents the same set of symptoms as xeroderma and seborrheic keratosis, and eventuates, as they do, in epithelioma.

To demonstrate what an important rôle light plays in the development of seborrheic keratosis William Dubreuilh collected the material in his clinic in Bordeaux and found that of 162 patients, 101 had outdoor and 61 indoor occupations; that is to say, 62.5 per cent. of them were exposed to the sun, while 37 per cent. were not.[1]

The following case is so instructive in regard to this question as to be well worth a short consideration:

The patient, an officer in the U. S. Navy, aged 56, in excellent general health and with the fair, fine skin of those of northern European extraction, consulted me on Sept. 22, 1911, on account of a large number of seborrheic keratoses which he said had first appeared about ten years previously as brown discolorations. The patches were principally situated along the lower jaw, in front of the ears and on the rim of the ear-shells. Some of the patches were just roughened and covered by tightly adherent scales; others were reddened and desquamating, while still others were infiltrated, reddened and covered with a hard or crumbly, soft crust. Some of the latter, when curetted, showed that the disease process had extended down into the true skin, and therefore had undergone epitheliomatous degeneration.

There was a large number of deep brown spots, larger and darker in color than freckles, across the middle of the face and on the back of the hands. Here, however, the pigmented spots were not roughened. These spots and the roughened patches had appeared coincidently, and all were subsequent to a severe and prolonged exposure to sunlight, of which I shall speak later. The sebaceous glands of the nose and of the adjacent cheeks were patulous and plugged with comedones, the result of a rosacea due to indigestion, from which the patient had continually suffered while at sea, but from which he recovered on getting the better food incident to shore duty.

In the course of conversation regarding the cause of the degeneration evinced by his skin, the subject of light as a possible factor was mentioned, and the patient related the following very interesting bit of personal history:

His skin gave him no trouble till between the years 1883 and 1886, when he was engaged in the Coast Survey. For many hours of each day during these three years, he was out in a small boat plotting figures on a sheet of white paper stretched on a board. In this occupation, therefore, he was exposed to the direct rays of the sun, and also to those reflected from the water and from the white paper, and suffered severely from sunburn and from irritation of the eyes and eyelids. It was interesting to note that the affected areas along the jaws, in front of the ears and the integument of the ear-shells occupied exactly the situations well known to suffer severely in burns from the reflected light of snowburn and waterburn. It is also known, as pointed out by Jesionek, that the skin in front of the ears and of the ear-shells is particularly apt to show a patchy sensitiveness to light, corresponding in this respect, therefore, to the patchy nature of the patient's trouble.

There was another interesting point relating to the chief situation of the seborrheic patches in this case. The patient had suffered from rosacea, which is one of the seborrheides, and the middle zone of the front of his face was still seborrheic, as shown by its patulous, plugged sebaceous gland-ducts. It is on this kind of skin and in this situation that seborrheic keratoses tend to form, yet there were none present. Light on these surfaces had caused only deep freckling, such as was also present on the back of his hands. Nor were his eyelids affected, although they had suffered severely in the exposure to light. These are strong points showing that the patient's skin was not predisposed to the formation of these keratoses, and that it was not particularly sensitive to this action of light; but that it was rather the long-continued exposure to a light rich in actinic rays which set the degeneration in motion.

Snowburn, especially in the mountains and on glaciers, is much more severe than waterburn, and waterburn is severer than ordinary sunburn. There are two factors contributing to this: Light at high altitudes is much richer in actinic rays than light at lower levels, because as light travels down through the atmosphere it loses its actinic rays by absorption much more rapidly than its heat rays. We, therefore, who live at the bottom of the aerial ocean, are used to a light much poorer in actinic rays than that which we get when we ascend into the mountains.

There is still another reason for the severity of snowburn. A fine white powder, such as snow, readily absorbs the long waves at the red end of the spectrum and refracts the short ones at and beyond the violet end, so that not alone is the light itself at high altitudes richer in actinic rays than that to which we are ordinarily accustomed, but a greater proportional number of those rays are refracted, and they therefore con-

1. Dubreuilh, W.: Epitheliomatose d'origine solaire, Ann. de dermat. et de syph., June, 1907, p. 387.

tribute to causing the burn.[2] One of my patients, who was severely snowburned in Nevada, said that he noticed that on that day the snow and ice had looked particularly blue. The blue color often noticed in snow and ice is ascribed, in part at least, to the refraction of the rays at the violet end of the spectrum.

Still another reason for the severity of snowburn and waterburn is the greater quantity of light. The individual is exposed not alone to the direct light of the sun, but also to the light coming from the reflecting surface. Besides this, the reflected light strikes the exposed surfaces at an unusual angle, and so takes the cells by surprise. Cells which, throughout the foregoing years and even generations passed through by the individual, have been comparatively sheltered are suddenly exposed to direct injury by the reflected light rays. In addition to this, the beam of light passes through the cooled air over the water or snow and thereby loses a great quantity of its long, red, heat waves, and the man exposed, not feeling the pain or discomfort of the heat, is not warned of the damage the short painless actinic waves are causing until the injury is very great.

TREATMENT

In many instances a covering is all that is necessary. The parts covered by the clothing seldom suffer from this form of degeneration, and William Dubreuilh has shown that women who wear a head-dress enclosing the forehead, ears and sides of the face are free, in these situations, from keratotic degeneration. The necessities of life prevent enclosing the whole face in a dense covering. From what we know of the nature of light, however, a flimsier covering or veil, providing it be of the right color, may be efficient. Here, as in a photographic dark-room, a red screen will protect against the actinic rays. Nature, herself, in automatically protecting the skin, employs the colors yellow, red and brown.

The color of the skin in the white, yellow and red races depends on the yellow color of the outer horny covering, the reddish-brown pigment developed in the basal layers of the epithelium and the red blood in the capillaries of the connective tissue portion of the skin. Light reacts on every one of those elements, increasing its efficiency. One of the best-known effects of light on the skin is the production of erythema solare, or sunburn, when the skin becomes a bright, blood red. Of course, this red color, from increased blood-supply, is situated deeper than the epithelial layers of the skin which we are considering, and therefore, as far as its color is concerned, is not protective to them, but the red blood is protective to the connective tissue among the fibers of which it circulates. Furthermore, this increased blood-supply is indirectly protective even to the epithelial layers, as it causes an increased production of epithelial cells, and when this production is not too swift, causing denudation, induces an increased thickening of the horny and scurf layers. It may also be pointed out that light increases the cohesiveness between the individual epithelial cells, causing them to cling to one another and to form a thicker horny and scurf layer. The scurf layer, therefore, with its fine wrinkles and shedding epithelial cells, refracts the rays of light multitudinously, and must render the more easily refracted actinic rays less harmful.

In addition, light causes an increased production of pigment in the basal or pigment-forming cells of the epidermis. The pigment is spread over the lower more sensitive cells of the epidermis like a delicate veil lying between the upper yellow layer of horn and the deeper red one of blood.

In some races, notably in our North American Indians, the red tint of the skin due to red pigment is a salient feature. Recently, in traveling through the mountains of Arizona, Wesley A. Hill, a resident of Phoenix, pointed out to me a man he knew to be a full-blood Apache. The striking feature about him was the glorious, golden red of his skin. The red is particularly interesting in the present discussion of the protective action of the color red, as these Indians dwell high in the mountains in the clear air and strong sunlight of the highlands of Arizona, where the sunlight must be particularly full of actinic rays. Their skin is quite a contrast to the muddy dark skin of the Mexicans of the plains. Interesting too in this regard is what Zambaco Pasha says of Barbedienne, the celebrated bronze-founder, who represented his Abyssinians by first gilding a statue and then painting it with a special bronze varnish, so that the gilt shone through, like the pigment shining through the yellow horny layer of the skin. Zambaco Pasha furthermore remarks that the mountaineer Abyssinian with his clear bronze skin must not be confounded with the black muddy-complexioned negro of the Sudan. Therefore, both in the mountains of Abyssinia and in those of Arizona, where the sunlight must be particularly rich in actinic rays, Nature uses the color red abundantly as a protective veil.

In the case of my patient a red or yellow handkerchief tied down over the ears and under the jaws would have almost entirely protected his skin from injury from the upstreaming reflected actinic rays that we must assume caused his trouble. A yellow veil and yellow spectacles would probably have protected his whole face. A gray veil made of a mixture of red and green, such as Maklakoff employed in protecting workmen from the chemical rays of the arc light,[3] would also have absorbed the chemical rays and prevented his trouble.

The color of the paper on which the patient was required to write was also of importance. It was especially furnished for the work, and undoubtedly he would not have been permitted to substitute a darker paper, although writing on white paper in glaring light is well known to be exquisitely painful to some persons, from its effect on the retina alone. The color of the paper should be a subject of investigation; possibly it would be best to use a dull gray.

The treatment of the immediate lesions — the seborrheic patches themselves — also requires consideration, as they are not only disfiguring and disagreeable to the touch, but they also tend to epitheliomatous degeneration and are therefore dangerous. It is true that the evolution of this degeneration, as of all the phenomena involved, is of the slowest, and that it is only the occasional patch that becomes cancerous. Such an epithelioma, however, when once started grows faster and faster as it enlarges, and one patch developing into one cancer is usually sufficient to make a thoughtful or sensitive man unhappy. So, therefore, even if the patches are slow in development they will not fail in time to become interesting. Curetting and the application of tricholoracetic acid is the most effective topical treatment I have found. Patches may, however, be held in check and even be diminished in size by a salicylic acid and sulphur ointment:

2. Widmark: Quoted by A. Jesionek, Lichtbiologie und Lichtpathologie, p. 169.

3. Quoted by A. Jesionek, Lichtbiologie u. Lichtpathologie, p. 179.

℞	Gm.		
Acidi salicylici	0.50		gr x
Sulphuris præcipitati	3.00	or	ʒ i
Lanolini			
Petrolati āā	12.50		ʒ ss

Sig.: Rub in once a day.

If the surface of the skin is irritable and inclined to inflame, the soothing effect of camphor and of the mild mercurial salts, such as the mild chlorid or the yellow and red oxids, may be taken advantage of:

℞	Gm.		
Hydrargyri oxidi rubri			
Camphoræ āā	0.50	or	gr x
Lanolini			
Petrolati āā	12.50		ʒ ss

Sig.: Rub into the affected skin at night.

When the ointment is to be kept for a long time, the base constituted of lanolin and petrolatum is very good, as it does not decompose.

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THE TREATMENT OF DYSENTERY CASES IN STATE INSTITUTIONS

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In August and September dysentery makes its appearance, and is quite apt to be epidemic in prisons, jails, almshouses, asylums and other state institutions.

When epidemic the disease is found in all its forms, from the cases of loose, frequent mucous stools to the scraped-meat, bloody dejections. The latter cases are usually found in the demented, who are as a general rule much debilitated, and in the aged, whose assimilative and recuperative powers are low, and whose arteriosclerosis extends not only to the radial and temporal arteries, but to the finer vessels which supply the intestinal viscera. In cases of marked arteriosclerosis stupor is a prominent symptom, and the usual remedies do not appear to be of the slightest benefit.

In treating this disease during the past few years, I have exhausted the Pharmacopeia, going through the list of drugs from Squibb's diarrhea mixture to the many other opium formulas. Bismuth, salol and other forms of intestinal antiseptics have been resorted to. I have also used the high colon flushings with many kinds of medicated solutions (finding the normal salt solution as good as any), and have seen injury done the patient by the use in unskilled hands of that worst of all dissecting instruments, the syringe. The long colon tube often curls up in the rectal pouch, and when the stream from the syringe is turned on with force, the end of the tube is often seen making its appearance at the anal orifice, much to the surprise of the attendant or nurse.

A great deal of pain is caused the patient by unskilful manipulations in the rectal cavity, where the mucous membrane is softened and spongy on account of the continuous flow of mucous stools. Infection and painful tenesmus are often prolonged by irritation of the already overstimulated rectal nerves with various astringents, when the best course is to leave that portion of the anatomy absolutely at rest.

As the disease is accounted an infectious one, the most rigid rules should be adopted for the isolation of every patient, and the plan I have followed at the state institutions, in which the cases have been numerous, is as follows: When the patients present themselves for treatment it will be found that they have had a diarrhea for two or three days of which they said nothing, or thought little about, until they noticed some blood or "jelly-like stuff" in the stools. This is usually accompanied by sharp griping pains and tenesmus. When this history is obtained the patient should be isolated if possible and put to bed. The treatment is then begun by giving 1 grain of calomel at once; I prefer the tablets flavored with wintergreen, for they prevent in a measure the feeling of nausea that sometimes arises from the administration of the plain calomel.

After two hours the patient is given a teaspoonful of the following prescription, which for ward use I have designated as "acid diarrhea mixture:"

℞	Gm. or c.c.		
Acidi sulphurici dilut.	12		ʒ iii
Tincturæ cardamomi comp.	30	or	ʒ i
Aquæ, q. s.	250		ʒ viii

M. Sig.—One teaspoonful every two hours during the disease.

In conjunction with this the patient is to be given 1 tablespoonful of olive oil every two hours, and no other drugs or food should be given. Plenty of boiled water is given at frequent intervals. Exceptions may be made to the above treatment in the aged, debilitated or those affected with arteriosclerosis, by giving, in addition, a teaspoonful of brandy every three hours.

At the state prison, where the inmates are of more sturdy physique than those found in the almshouse, this treatment has proved very efficient. In the majority of cases the discharges have stopped in from two to three days. This has also been the case at the state workhouse and the state reform school. This plan of treatment has shortened the period of bed rest from weeks to a few days. The patient has been eager and ready for food, his convalescing has not been prolonged, and the slumbering appetite for "dope" has not been aroused by the opium derivatives, or the alcoholic appetite whetted by the "hot drop" or other stimulative treatment.

In previous epidemics many of our patients have complained of postdysenteric cramps and soreness over the lower portion of the abdomen, caused, no doubt, by masses of undigested milk curds, or other irritating food material taken when the vitality of the digestive tract was at its lowest ebb. This has not been a source of trouble so far this season, and the complete rest and collapse of the intestinal tube appear to be the proper way of treating this "institutional disease." This form of treatment has given gratifying results and should be of service to those who deal with patients in military barracks, camps and state institutions.

The Quack in the Crisis.—Let the ministry see that the quack, who masquerades under the banner of humanitarianism, is utterly selfish in his work. Who makes possible the digging of the Panama Canal, the quack with his special cure for cancer or the regular physician who gives his life in the discovery of the cause and prevention of yellow fever? Who is found on the battle-field attending the dying and wounded, the quack or the regular doctor? Which would our government choose? Who would bravely go? Who is leading and who opposing the fight against impure and adulterated drugs and foods? Let pestilence invade any part of this country, or let a scourge of small-pox or yellow fever sweep any portion of our land and you will hear the government cry out for doctors! doctors to stop the ravages of these awful plagues. Even the daily press of the land, which fights the battles of the quacks for a consideration, will cry, "Send us doctors!" Where then is your quack?—F. Poe in *Jour. Kansas Med. Soc.*

THE ETIOLOGY OF UNILATERAL RENAL HEMATURIA *

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It is my purpose to call attention to the rôle played by congestion of one kidney, and the relative importance of this congestion as an etiologic factor in the causation of that symptom, unilateral hematuria.

The pathology underlying unilateral hematuria associated with tuberculosis, calculus, neoplasm or infarct, in which only one kidney is involved, is too well known to require consideration at this time, for infiltration, erosion and ulceration are in themselves sufficient to produce decided unilateral bleeding. But there is another large class of cases in which the pathology is obscure. This class includes a group of so-called essential hematurias in which there is found no intrinsic renal lesion to account for the bleeding, and it is my opinion that here, as probably in other conditions to be considered, a congestion acts as the *primum movens*, an extrinsic lesion plus a resulting intrinsic congestion causing the unilateral bleeding. The congestion, if persistent, may result in a definite lesion in the kidney.

Several writers have mentioned the congestion found at operation or autopsy; others have considered congestion as being the possible cause of the microscopic changes found, but in no writings have I been able to find sufficiently definite stress laid on congestion as the actual cause of the hematuria. It must be realized that if it were not for the appearance and persistence of this symptom, an overwhelming majority of the patients presenting a hematuria would never seek medical advice; and moreover, when the patient has been relieved of this symptom, the internist or the surgeon is apt to consider that a cure has been obtained, irrespective of the appearance or continuance of a trace of albumin or the finding of a tube-cast.

THEORIES OF ESSENTIAL HEMATURIA

Briefly stated, the three main theories that have been offered to account for so-called essential hematuria are as follows:

1. Chronic Nephritis.—Israel,[1] Albarran,[2] Rovsing,[3] Kuster,[4] Zuckerkandl[5] and Fowler[6] defend the position that a chronic nephritis is most frequently, if not always, the underlying pathologic lesion. We know that nephritis may be only unilateral and moreover may involve only isolated areas in one kidney — a condition the Germans term *flickweise* and the French *néphrites parcellaire*. The nephritic theory is ably supported by the statistics of Kretschmer[7] and of Bleek.[8] The former in 1907 found nephritis on microscopic sections in fifty-three out of sixty-two cases; and Bleek in 1909 stated that fifty of his eighty cases showed undoubted evidence of chronic nephritis. The advocates of this theory are apt to be overzealous, for somewhere a line must be drawn between the lesions of definite outspoken interstitial or glomerular nephritis, and the minor lesions found only after long search that are sometimes made responsible for severe and prolonged bleeding. Moreover, there are a few cases in which no nephritis could be found after the most diligent study.

2. Hemophilia.—Senator[9] is the great advocate of this theory. It is supported by cases of hereditary and family hematuria as reported by Aitkens,[10] Atlee,[11] Guthrie,[12] Imbert[13] and Nonne.[14] But it seems unreasonable to expect hemophilia to show itself only in one kidney and to wait until after mid-life, as it generally does, to make itself evident.

3. Angioneurosis.—Legueu[15] and Klemperer[16] are the advocates of this theory, supporting it with the work of Kuster and Karteweg[17] on the plexus sympatheticus, that of Brown-Séquard[18] and de Vulpian[18] on the experimental lesions of the cord, and Brault's[19] case of jacksonian epilepsy.

These three theories present an intrinsic, an extrinsic or a hypothetic cause to account for the unilateral hematuria. The most popular and most ably supported theory is the intrinsic, or that of chronic nephritis. Its advocates maintain that if a careful search be made, nephritic lesions can be demonstrated in practically all cases of unilateral hematuria.

No one of these theories explains, in my opinion, the pathologic condition of the kidney which allows the passage of blood, unilaterally, into the urine, and which represents the only symptom of which the patient must be relieved, namely, hematuria. I believe that we have to deal with a condition of local congestion or venous stasis in these cases, and whether or not the ultimate pathologic condition in a given case be due to any one of these three theories, the point that I wish to make and present for discussion is that the surgical pathologic condition, that is, the one accessible to surgical intervention (Dorland), is a congestion of the kidney, that the bleeding in any given case is secondary to a renal congestion, and that this condition may be the result of numerous lesions other than a nephritis.

It must be conceded that there are extrinsic conditions, which I shall mention, that can cause a renal congestion, and also it must be realized that hematuria is frequently associated with them. Given a cause for intermittent active congestion of the kidney, or passive congestion with periods of exacerbation, in which sudden interruption or augmentation of the blood-supply has its effect on delicate renal tissue and in which several times a day there occurs congestion and inflammatory exudation, atrophic changes must result, the areas of weakened blood-supply suffering first and a chronic patchy nephritis ensuing (Munk,† Newman, Posner, Weisgeben and Perl). So that the frequency with which nephritis is demonstrable in these cases must be counterbalanced in a certain number by the length of time that the causative factor of the congestion has existed.

In those cases which have minor microscopic lesions of nephritis, and those cases in which no casts or albumin can be found clinically before operation — in other

* Read in the Symposium on Renal Surgery and Pathology in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Israel: Mitt. a. d. Grenzgeb. d. med. u. Chir., v, 495.
2. Albarran: Assn. franc. d'urol., Proc.-verb., 1899, iv, 104.
3. Rovsing: Brit. Med. Jour., Nov. 19, 1898, p. 1547.
4. Referred to by Casper: Arch. f. klin. Chir., 1906, lxxx, 378.
5. Zuckerkandl: Wien klin. Wchnschr., 1905, xviii, 97.
6. Fowler: Johns Hopkins Hosp. Bull., 1906, viii, 487.
7. Kretschmer: Chicago Med. Recorder, October, 1907, p. 575.
8. Bleek: Beitr. z. klin. Chir., 1909, lxi, 398.
9. Senator: Berl. klin. Wchnschr., 1891, xxviii, No. 1; also 1910, xlvii, No. 5.
10. Aitkens: Lancet, London, Aug. 14, 1909.
11. Atlee: St. Bartholomew's Hosp. Jour., December, 1901.
12. Guthrie: Lancet, London, May 3, 1902.
13. Imbert: Ann. d. mal. d. org. génito-urin., 1899, xvii, 1192.
14. Nonne: Deutsch. med. Wchnschr., 1902, xxviii, Vereins-Beilage, p. 101.
15. Legueu: Ann. d. mal. d. org. génito-urin., 1891, p. 564.
16. Klemperer: Deutsch. med. Wchnschr., 1897, Nos. 9 and 10, p. 129.
17. Kuster and Karteweg: Chirurgische Behandlung der Nephritis, 1901.
18. Referred to by Klemperer. (Footnote 16).
19. Referred to by Motz: Ann. d. mal. d. org. génito-urin., 1910, i, 578.

† Munk, P.: Berl. klin. Wchnschr., 1864, i, 333.

words, in those cases which Albarran,[2] Hamonic[20] and Fowler[6] say may go for years — in which, says Fowler, "hematuria may be the first and only sign of renal sclerosis, occurring sometimes years before other symptoms make their appearance," or as Albarran says, cases in which "hematuria may precede the evolution of a nephritis possibly for years" — I contend that the nephritis is the effect and not the cause, and that the hematuria is secondary to renal congestion, itself secondary to other causes. And so, though I cannot deny the possibility or the frequency of hematuria in the course of chronic nephritis, I do doubt that the minor lesions in a certain number of cases are sufficient to cause the hematuria, and this is supported by a small but definite number of cases in which hematuria took place and in which on the most searching examination nothing relative to a nephritis could be demonstrated. The acceptance of this idea would eliminate from consideration the hemophilic and angioneurotic theories and would eliminate the possibility of what has been termed "essential hematuria."

This condition of congestion or venous stasis of one kidney may occur, and a hematuria results, from any of the following extrinsic conditions, the congestion resulting from a definite lesion, and the hematuria resulting from the congestion.

EXTRINSIC CONDITIONS GIVING RISE TO HEMATURIA

1. Obstruction to Urinary Outflow.—Guyon and Albarran[21] ligated a dog's penis, which from the resulting retention produced a congestive hematuria. They note, first, vascular arborization on the mucosa, then spots of ecchymosis and finally epithelial desquamation and extravasation of blood. Hematuria has been observed in cases of enlarged prostate with complete retention in which after vesical drainage the hematuria ceased (Freeman[22]). Schwyzer[23] gives a most instructive case of ureteral stone, in which the bleeding was seen to come from the kidney at operation, microscopic section of the kidney was negative for nephritis, and later the stone was passed. He says: "On severe congestion the glomeruli seem to answer with hemorrhage and the convoluted tubules with extensive desquamation." Terrier and Boudouin[24] report four cases of hematuria in eighty-three cases of hydronephrosis, Albarran[25] cites six cases and Bleck[8] ten.

2. Obstruction to Blood-Supply.—In 1843 George Robinson[26] demonstrated by experiments that obstruction to renal veins caused both albuminuria and hematuria. Newman[27] reports two cases of hematuria in movable kidney. Fenwick[28] cites numerous cases to prove that torsion of pedicle can cause both patchy nephritis and hematuria, as does also Rovsing[29] in a case of torsion of kidney pedicle behind an adherent lobe of liver. Albarran and Guyon[30] had the unique experience of seeing seven cases of hematuria associated with pregnancy, which they explained by pressure of the enlarging uterus on the vessels of the kidney pedicle, provoking a stagnant hyperemia. Schuller[31] had a woman who developed it during five pregnancies at the twenty-second week.

3. Abnormal Renal Vessels.—This has been noted by Hayes,[32] Pousson[33] and Schuller;[34] in each case a vein and artery were supernumerary and their ligation relieved the condition. Here one must remember that the softer-walled vein is the first to be occluded. Recently, Botez,[35] in a study of horseshoe kidney, in which the blood-supply is often most intricate and abnormal, records three cases in which hematuria was a symptom.

4. Congestion Secondary to Cardiac Lesions.—Histologically here one finds rupture of the glomerular vessels and hemorrhage into the space of Bowman's capsule. Askanazy[36] mentions twenty-nine cases of cardiorenal disease in which the patients died with marked cyanosis; ten presented hematuria.

5. Congestion Secondary to Hepatic Lesions.—This is a cause of which one hears but little. Tuffier and Lejar,[37] and more recently Gilbert and Villaret[38] have sufficiently demonstrated the existence of portorenal anastomotic channels. Dopter,[39] Mollard[39] and Basile[40] have all observed renal congestion post mortem in cases of cirrhosis of liver, and in one of Basile's cases this was confined to the left kidney only.

And so though I have but mentioned in part the cases covering the various lesions, omitting those of thrombosis and those associated with appendicitis, it can easily be seen that there is quite a group of conditions extrinsic that can cause congestion of the kidney, and in these conditions hematuria has been frequently observed as a symptom. Given such an etiologic factor, the question then arises: Can a well kidney bleed? Senator,[9] White,[41] Caspar,[42] Robinson and Jacoulet,[43] all hold that it is possible, while Israel,[44] Motz,[45] Fronnchtéine,[46] Rovsing,[29] Kapsammer[47] and others defend the position that a lesion is necessary. In the face of such authority it is not for me to dogmatize. There is much to be said on either side and I can but give my conclusions here: 1. If nephritis is primary, congestion is secondary and hematuria tertiary. 2. If some extrinsic condition is primary, congestion is secondary and hematuria tertiary; while often it must be conceded that if an intermittent active congestion occurs or a passive congestion with periods of exacerbation, glomerular and interstitial changes must take place in the kidney; and hence in this type of cases, if congestion is existent over a longer period of time, we should expect the microscope to show lesions of chronic nephritis. So in either type we find congestion in the middle rôle and this is the role of surgical pathology and the one to be relieved by operation.

There is just one other condition in which congestion *must* play the major pathologic rôle; the condition which Fenwick[28] first described and called "renal varix,"

20. Hamonic: Assn. franc. d'urol., Proc.-verb., 1899, iv, 115.
21. Guyon and Albarran: Ann. d. mal. d. org. génito-urin., 1897, xv, 113.
22. Freeman: Ann. Surg., 1904, xxxix.
23. Schwyzer: Ann. Surg., May, 1909.
24. Referred to by Motz, Ann. d. mal. d. org. génito-urin., 1910, xxviii, 583.
25. Referred to by Motz, Ann. d. mal. d. org. génito-urin., 1910, xxviii, 577.
26. Robinson: Med. Chir. Tr., London, 1843, xxvi, 51.
27. Newman: Clin. Soc. Tr., 1897, xxx, 65.
28. Fenwick: Handbook of Clinical Cystoscopy.
29. Rovsing: Centralbl. f. d. Krankh. d. Harn. u. Sex. Org., 1898, ix, 616; Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1902, x, 283.
30. Referred to by Fronnchtéine, Ann. d. mal. d. org. génito-urin., 1910, xxviii, 899.
31. Schuller: Med. Press and Circular, 1906, lxxxi, 62.
32. Hayes: Ann. Surg., March, 1908, xlvii.
33. Pousson: Ann. d. mal. d. org. génito-urin., 1910, xxviii, 609.
34. Schuller: Wien. klin. Wchnschr., 1904, xvii, 477.
35. Botez: Jour. d'urol., 1912, i, Nos. 2, 3, 4, 5.
36. Askanazy: Ztschr. f. klin. Med., 1905-06, lviii, 432.
37. Referred to by Robinson and Jacoulet, Rev. de Chir., 1910, xli, 594.
38. Gilbert and Villaret: Thèse de Paris, 1906.
39. Referred to by Robinson and Jacoulet, Rev. de chir., 1910, xli, 595.
40. Basile: Morgagni, March 22, 1909.
41. White: Quart. Jour. Med., July, 1911.
42. Caspar: Arch. f. klin. Chir., 1906, lxxx, No. 2, p. 350.
43. Robinson and Jacoulet, Rev. de chir., 1910, xli, 582.
44. Israel: Klinik der Nierenkrankheiten, Berlin, 1901.
45. Motz: Ann. d. mal. d. org. génito-urin., 1910, xxviii, 577.
46. Fronnchtéine: Ann. d. mal. d. org. génito-urin., 1910, xxviii, 897.
47. Kapsammer: Wein. klin. Wchnschr., 1905, xviii, 97.

by which he designated a varicosity situated near or on the apex of any one of the papillæ. A careful review of the literature on this subject leaves eight cases as being purely of this type. One has to be careful not to find it confused with ecchymotic or telangiectatic splotches over the mucous membrane of the renal pelvis, which is present in 44 per cent. of nephritic cases (Askanazy[36]) and so the cases of Kusumato,[48] Keffe,[49] Hayes[52] and Congdon[50] have to be rejected; also one of Pilcher's[51] cases must be rejected as the hemorrhage was not definitely seen at cystoscopy to be from one or the other side. Three cases of Fenwick's are rejected as for various reasons the diagnosis was not substantiated, whereas Myles'[52] case is a border-line one, his pathologic report calling the condition "myxangioma" of the entire renal pelvis.

The accepted cases are:

MacGowan[53]—three cases, all left-sided.
Pilcher—two cases, both left-sided.
Cabot[54]—one case, left-sided.
Fenwick—three cases, 2 left-sided and 1 right-sided (cases 1, 2 and 6).

This gives us eight (or if we accept Myles' case, nine) cases of renal varix occurring on the left side and but one on the right. This proportion is certainly unique, especially so, as you must have already judged, that the association of this formation with a condition predisposing to congestion makes it all the more important.

To account for this predisposition we should examine the left renal vein: We find that it normally crosses in front of the aorta directly under the origin of the superior mesenteric artery lying in the angle formed by the two; under the pancreas and the third portion of the duodenum. Its normal tributaries are (1) spermatic (ovarian), (2) inferior and middle adrenal, (3) lower azygos, (4) ureteric, (5) adipose or capsular (from fatty capsule); abnormally it may pass behind the aorta and may receive as tributaries (1) inferior phrenic (left), (2) splenic, (3) gastro-epiploic (left), (4) colic (left).

In other words, a vein of great importance with an abundance of work to do, but with a poor, and maybe, an embarrassed outlet. Moreover, of these cases, one of Pilcher's patients had hemorrhoids and his liver "was much decreased in size." His other patient had varicosities about the ureteral orifice. Myles' patient had been operated on for hemorrhoids; Cabot's had enlarged left inguinal glands, and I need only draw your attention to the external visible and frequent finding of left-sided varicocele. Some of the other cases were scarcely complete enough in their reports to cover such points as these even if they had been present.

The right-sided case of Fenwick undoubtedly was a case of renal varix and the only explanation found in the report lies in the fact that he calls the "right kidney loose," and in 1 per cent of cases the right spermatic (ovarian) vein opens into the renal vein (Bennett).[55]

A word as to the mode to approaching a case of hematuria to arrive at a diagnosis.

1. One should of course cover the history and not fail to make a thorough physical examination, looking for signs of nephritis in the cardiovascular system and in repeated urine examination, and for evidence of functional disturbances in the digestive, respiratory, nervous and cutaneous systems. The retinal examination may be the turning-point of a suspicious case. Of course, an *x*-ray plate of the entire urinary tract should be taken after a brisk purge. Varicosities should be looked for elsewhere; as Bennett says, "Eighty-five per cent. of persons coming under observation with varicocele present evidences of varix in other parts."

2. Cystoscopy should show us definitely which side is bleeding and in case hematuria is not present when the patient is to be examined, I would advise waiting, as this point should be ascertained before ureteral catheterization is attempted.

3. Ureteral catheterization should follow cystoscopy, and here to exclude bleeding from the ureter specimens should be taken from the first and second portions of the ureter, and finally the catheter may be passed to the renal pelvis. The specimens should be studied for infection. When the catheters are finally passed to the renal pelvis, kidney function should be ascertained by the phenolsulphonephthalein test. Here I prefer an intravenous injection of the drug and readings at the end of the first and second fifteen minutes and the second half hour.

4. Then a collargol injection of the renal pelvis and an *x*-ray plate of the bleeding side should be made, to exclude hydronephrosis or a kink of the ureter.

5. Finally pelvic lavage with epinephrin may be administered.

If this procedure does not lead to a diagnosis and the hematuria persists it is the duty of the consultant strongly to advise exploratory nephrotomy. Fenwick says, "It should, I am sure, be a golden rule to explore every case of renal hemorrhage and to be prepared for nephrectomy."

The operator should expose the kidney with as little handling as possible, ever observant to recognize nephroptosis, abnormal vessels, constrictions of the ureter or perinephric adhesions.

Nephrotomy should be performed along Brödel's line and here lies the strongest argument of all in favor of congestion being the cause of this symptom disease, "essential hematuria." Why is it that so many are cured by a single exploratory operation? It is true that in some cases the relief of tension (and as some would have us believe, the cure of a nephritis) is caused by decapsulation alone, while the breaking up of perirenal adhesions, or the intercurrent fixation of a movable kidney, undoubtedly is applicable at different times according to the nature of the case. But in so-called "essential hematuria," in which so often a cure follows an apparently futile nephrotomy, if the true cause is, as I advocate a renal congestion, we must realize that a nephrotomy, with its first effect causing a depletion and its lasting effect a permanent hemostasis, produces a similar result to that obtained by the ligation of hemorrhoids, by the excision of varicose veins, or by the resection of a varicocele. For Brödel,[56] in his classic study on the distribution of the vessels of the kidney, says:

While there is a complete arterial division in the plane connecting the posterior calices and terminating in the lateral half of the upper and lower calices, the veins follow quite a different arrangement. Around the bases of the pyramids they anastomose and form the familiar venous arches. They

48. Kusumato: Deutsch. Arch. f. klin. Med., 1907, lxxxix, Nos. 5, 6.
49. Keffe: Am. Jour. Urol., February, 1907.
50. Congdon: Western Med. Rev., October, 1910.
51. Pilcher: Ann. Surg., May, 1909; Boston Med. and Surg. Jour., July 7, 1910.
52. Myles: Med. Press and Circular, Aug. 23, 1899.
53. MacGowan: Ann. Surg., April, 1910.
54. Cabot: Am. Jour. Med. Sc., January, 1909.
55. Bennett: Monograph on Varicocele, 1891.
56. Brödel: Johns Hopkins Hosp. Bull., 1901, p. 11.

unite in large branches that run between the sides of the pyramids and the columns of Bertini to the necks of the calices where they lie between the pyramids and the arterial branches. The thickness of these collecting veins accounts for the peculiar lobulated appearance of the base and sides of the pyramid. Around the necks of the calices, both anteriorly and posteriorly, these veins form a second system of anastomosis much shorter and thicker than at the base of the pyramids. This appears as a number of thick loops or rings which fit like a collar round the neck of the calices. Nearly all the collected blood of the posterior region is carried anteriorly through these short, thick stems, to join that of the anterior portion. One finds that an incision through the posterior row of calices would avoid all the arteries but would sever *six* of these collecting veins. As there remains, however, sufficient anastomosis at the upper and lower pole of the kidney, no serious consequences should follow injury of these veins.

CONCLUSIONS

In concluding I would leave the subject as follows: In a majority of cases nephritis with its concomitant congestion plays the leading rôle. In a second group the bleeding is from varicosities in the pelvis secondary to congestion resulting from some of the extrinsic conditions above enumerated. And in a third group the hemorrhage is due to either rupture of a vessel or diapedesis of red blood-vessels, again secondary to congestion caused by some one of the above-mentioned extrinsic possibilities.

While from the point of view of the patient who desires to be rid of this constant drain on the system, and from the point of view of the surgeon who is consulted whatever the ultimate pathologic condition is (and it may be one of a large category), we are to consider that the actual etiologic factor causing the hematuria is a renal congestion, and that this is most surely and successfully relieved by the performance of a nephrotomy.

401 Professional Building.

THE INFLUENCE OF THE OPERATION OF RESECTION OF THE KIDNEY ON THE FUNCTION OF THE ORGAN

A REPORT OF EXPERIMENTAL WORK ON RABBITS *

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This communication is a supplementary report of experimental work done on the kidneys of rabbits. The preliminary report of this work done in the Laboratory of Surgical Research of the Harvard Medical School has been published in the *Transactions of the American Association of Genito-Urinary Surgeons*, 1909.

The experimental work which forms the basis of this communication was suggested by an operation on a woman with but a single kidney, which contained calculi. The kidney was exposed in the lumbar region, split in Brödel's line and three calculi of medium size were removed. Another calculus the size of a pea was also detected in the ureter at a point two inches from the pelvic outlet. This stone was worked upward into the kidney pelvis, which was opened on the posterior surface and the stone removed. A ureteral sound was passed through the ureter to the bladder to establish its patency. The incision in the pelvis was closed with fine silk. The wound in the kidney substance was closed, without drainage, with mattress sutures of catgut. The external wound was closed without drainage. The patient was catheterized immediately following the operation, and about one ounce of slightly bloody urine was withdrawn. There was some fear entertained that the kidney might not secrete following the operation; to determine this the patient was catheterized one hour after the operation and every subsequent half hour. No urine could be obtained from the bladder by catheterization until eight and one-half hours after operation, at which time a little more than one dram of slightly bloody urine was obtained. Catheterization one hour later showed a little less than one ounce of almost clear urine, and the catheterization one hour later (ten and one-half hours after operation) showed a little over one ounce of a nearly clear urine. From that time on, the amount of urine increased, and the patient voided a nearly normal-colored urine in fair amounts, showing no further diminution in activity of the kidney function.

The question which presents itself in connection with this operation and the accompanying temporary arrest of the kidney function is "Does a kidney which is subjected to an operation temporarily cease functionating?"

All are familiar with the ideas regarding reflex anuria. The subject here under consideration is not the same, inasmuch as we are dealing with a single diseased kidney at the outset. It may be, however, that the arrest of the kidney function in the case referred to finds its explanation in the same influences as reflex anuria, when one kidney is operated on and the other diseased. Whether or not an operation on one kidney while the other is healthy results in a temporary arrest of the secretory power of the kidney operated on is the point in question. It may be that an operation performed on one kidney arrests its secretion temporarily, no evidence of the fact being demonstrable because of the unarrested secretory power of the untouched healthy kidney on the opposite side.

It being quite impossible to determine the arrest of the function in a kidney operated on in the presence of another healthy kidney which continues to secrete urine following operation, it becomes necessary in experimental work that we should deal with animals possessed of but one kidney. The experimental work to determine this point consisted in:

Step 1.—The removal of the left kidneys of rabbits, measuring the size of the right kidney in order that its compensatory enlargement might be determined later, and noting the time following operation in which the rabbit voided urine.

Step 2.—Subsequently operating on the remaining right kidney, measuring its size to determine the vicarious enlargement of the organ, resecting a small portion of the kidney substance from its greater convexity and splitting through the kidney substance to the pelvis. *A.* Closing the wound in a certain number with mattress sutures and noting the time following the operation in which the rabbit voided urine. *B.* Establishing drainage (*a*) in a certain number with a rubber tube, and (*b*) in others with gauze, not closing the kidney wound entirely and noting the time at which kidney secretion was again established. The technic employed in each rabbit was the same. All the animals were thoroughly anesthetized with ether. The preliminary and supplementary reports referred to in the tables are separate series of experiments.

* Read in the Symposium on Renal Surgery and Pathology in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* From the Laboratory of Surgical Research, Harvard Medical School.

TECHNIC

Step 1.—The abdomen was opened through a median incision. The left kidney was exposed, freed from its bed, the pedicle clamped and tied with catgut and the kidney removed. The right kidney was exposed and measured by means of compasses without dislodging it from its bed, the measurements being the length of the organ from pole to pole, and the width from the junction of the pelvis and kidney substance to the midpoint of the greater convexity. The stomach was drawn into the wound, and injected with 25 minims of a 10 per cent. aqueous solution of methylene-blue by means of a hypodermic syringe. The needle puncture in the stomach was inverted by a purse-string suture of linen thread. The abdominal wound was then closed, and the rabbits placed in cages, the floors of which were covered with white blotting-paper so as to determine the presence of the first urine voided containing methylene-blue.

The rabbit normally urinates about every three hours. When one of the two healthy kidneys was removed, urination was somewhat retarded. This may be due to reflex inhibition of the function of the remaining kidney; more probably, however, it was the result of the ether. It was impossible to note the exact moment at which urination took place. In this class, however, urination was noted to take place before eighteen hours in all rabbits, and earlier in some as may be seen in Table 1.

TABLE 1.—DURATION OF TIME BETWEEN THE LEFT NEPHRECTOMY AND THE FIRST URINATION

PRELIMINARY REPORT

Rabbit	First Urination—Hours	Rabbit	First Urination—Hours
1	Died.	5	Between 10 and 18
2	Between 10 and 18	6	Between 4 and 6
3	Between 10 and 18	7	Between 1 and 4
4	Between 10 and 18		

SUPPLEMENTARY REPORT

Rabbit	First Urination—Hours	Rabbit	First Urination—Hours
8	Between 6 and 12	18	Between 12 and 20
9	Between 6 and 12	19	Died.
10	Between 6 and 12	20	Between 20 and 25
11	Between 6 and 12	21	Died without urinating. 4 hours after operation.
12	Between 12 and 20		
13	Between 12 and 20	22	Between 6 and 20
14	Between 6 and 11	23	Between 6 and 20
15	Between 13 and 20	24	Between 6 and 20
16	Died, without urinating. 6 hours after operation.	25	Between 6 and 20
		26	Between 6 and 20
17	Between 6 and 13	27	Died.

Step 2.—Performed several days later. The abdomen was opened through the same median incision and the kidney was exposed, measured as before and freed from its bed. A wedge from the greater convexity, measuring from 2 to 3 cm. long by about 1 cm. wide and from 1 to 1.5 cm. deep, was removed. A blunt instrument was passed into the pelvis in each instance. The wound in the kidney was closed by two mattress sutures of No. 00 catgut, being placed through the substance of the kidney and including the capsules. The stomach was injected with methylene-blue in the same manner as noted in Step 1. The rabbits were placed in cages, the floors of which were covered with white blotting-paper and the time of the first urination following operation noted.

TABLE 2.—DURATION OF TIME BETWEEN THE RESECTION OF THE REMAINING RIGHT KIDNEY, CLOSING THE WOUND ENTIRELY, AND THE FIRST URINATION

PRELIMINARY REPORT

Rabbit	First Urination—Hours	Rabbit	First Urination—Hours
1	Died.	5	Between 43 and 44
2	Between 38 and 43	6	Between 38 and 43
3	Between 38 and 43	7	Died during operation.
4	Between 38 and 43		

SUPPLEMENTARY REPORT

Rabbit	First Urination—Hours	Rabbit	First Urination—Hours
8	Between 17 and 22	15	Died 3 days after first operation.
9	Between 17 and 22		
10	Between 26 and 27	16	Died 6 hours after first operation.
11	Between 23 and 27		
12	Between 23 and 27	17	Died 3 days after first operation.
13	Between 22 and 24		
14	Between 23 and 28		

When the operation of resection of a portion of the only remaining kidney present in the rabbit was performed, and the kidney wound closed entirely, the time at which urination was established was considerably longer than when a nephrectomy was performed on its mate. In none of the rabbits did urination take place before seventeen hours, and in most it occurred after thirty hours. In one it did not occur for forty-three hours following operation.

It became evident from these experiments that an operation of kidney resection on a healthy rabbit with but a single kidney, although that kidney is healthy and has undergone its maximum vicarious enlargement, does temporarily diminish the function of the organ, as evidenced by the fact that urine ceases to be found for many hours.

It having been determined from these experiments that an animal possessed of a single kidney has, following an operation of resection of a portion of the kidney and closure of the wound entirely by sutures, a temporary arrest of its secretory function, information was desired as to whether or not the same arrest of urinary secretion takes place when the kidney wound is not closed entirely, but is drained.

To determine this point, another series of animals was subjected to a left-sided nephrectomy, the right side being left undisturbed; subsequently the same operation of kidney resection as previously noted was done, but instead of closing the wound entirely, rubber tubing or gauze was carried into the renal pelvis and brought out through the loin, the kidney wound being but partially closed by a catgut suture on either side of the drainage. A clean pad was placed over the drainage and fastened in position so as to make evident the first appearance of methylene-blue in the pad. The animals were placed on white blotting-paper for the detection of the urine if voided. The time at which the elimination of this fluid, which determined the time at which the kidney began secreting when (*a*) a rubber tube was used, and when (*b*) gauze was used, is seen in Table 3.

TABLE 3.—DURATION OF TIME BETWEEN THE OPERATION AND THE FIRST SECRETION OF URINE WHEN THE KIDNEY WAS DRAINED BY A RUBBER TUBE

PRELIMINARY REPORT

Rabbit	Time of Urination
1	The pad on the drainage-tube became moistened with a blue fluid between six and seven hours following operation.
2	The pad on the drainage-tube became moistened with a blue fluid between six and one-half and seven hours following operation.
3	The pad on the drainage-tube became moistened with a blue fluid between seven and eight hours following operation.
4	The pad on the drainage-tube became moistened with a blue fluid between seven and eight hours following operation.
5	The pad on the drainage-tube became moistened with a blue fluid between six and one-half and seven hours following operation.

SUPPLEMENTARY REPORT

Rabbit	Time of Urination
6	The pad on the drainage-tube became moistened with a blue fluid between six and seven hours following operation. Between eleven and twenty hours a blue urine was voided.
7	Died.
8	The pad (first) was moistened with a blue fluid at the end of six hours. Between nine and eleven hours a blue urine was voided.
9	Died.
10	The pad (first) was moistened with a blue fluid between seven and nine hours following operation. Between nine and eleven hours a blue urine was voided.
11	The pad (first) was moistened with a blue fluid between seven and nine hours following operation. Between eleven and twelve hours a blue urine was voided.
12	Died.
13	The pad (first) was moistened with a blue fluid between six and eight hours following operation. Between eight and ten hours a blue urine was voided.
14	The pad (first) was moistened with a blue fluid between six and ten hours following operation. Between ten and twelve hours a blue urine was voided.
15	Died.

It was noted that the pads became stained with a blue fluid before eight hours in each instance; before seven hours in the majority.

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These animals were well forty-eight hours after operation. They were killed by the injection of strychnin. The autopsies showed that the kidney incisions approximated by the suture at either side of the tube were firmly adherent. The kidney substance appeared normal with no evidence of blue stains. There was slight hemorrhage in most of the kidneys for a depth of from 1 to 3 cm. around the tube. There was no blood-clot in the kidney pelvis, ureter or bladder.

All of the animals used in the supplementary experiment urinated a blue urine within a few hours after the appearance of the stain on the pad covering the drainage tube placed in the nephrectomy wound.

TABLE 4.—DURATION OF TIME BETWEEN THE OPERATION AND THE FIRST URINE SECRETED WHEN THE KIDNEY WAS DRAINED BY GAUZE

Rabbit	Time of Urination
1	The pad over the drainage became moistened with a blue fluid between six and seven hours following operation.
2	The pad over the drainage became moistened with a blue fluid between six and seven hours following operation.
4	Gave birth to six rabbits two hours after operation. Died five hours after operation without secreting urine.

When the nephrectomy wound was drained with gauze, it was noted that the pads became wet with a blue fluid in each instance before seven hours. In one before five hours.

These animals were well forty-eight hours after operation and were killed at that time by the injection of strychnin. The autopsies showed the kidney tissue approximated by the sutures to be firmly adherent. The kidney tissue appeared normal with no evidence of blue stains. The gauze wick was firmly held in the kidney wound by the kidney tissue. The gauze extended into the kidney pelvis in each instance. There was a blue fluid in each bladder, and although the animals did not void urine up to the time they were killed (forty-eight hours) they unquestionably would have done so if allowed to live longer.

Tables 3 and 4, comparing the kidneys drained with a tube and with gauze, show that the kidney secreted a blue fluid in each instance before eight hours, in most before seven hours, and that the time of the appearance of the blue fluid was nearly the same with gauze as with rubber tube drainage.

It is to be noted that the kidneys drained with a rubber tube and by gauze secreted urine in about one-fifth of the time that was required for the urine to be voided when the kidney wound was closed entirely. Some time must be allowed in the latter instance for the collection of a certain amount of urine in the bladder before it escaped by the act of urination, yet even allowing several hours' time for this, it is unquestionable that the blue was secreted much earlier in the kidneys drained than in those that were closed tight.

As to the difference between the kidneys drained with the rubber tube and those drained with gauze, it is to be noted that the time of excretion of the blue was practically the same, the only difference between the results obtained with the two forms of drainage material being that all the animals drained with gauze had a blue-colored urine in the bladder, while those drained with the tube had none, except in two instances in which the tubes had become dislodged from the kidney pelvis and the ends occluded by the kidney tissue.

It may therefore be inferred that there is a freer escape of fluid from the kidney pelvis when drained with a tube than when drained with gauze.

While performing these experiments, it was a simple matter to note the vicarious enlargement of the right kidney. At the time of performing the left nephrectomy measurements of the right kidney were made, and again at the time of the second operation.

Observations were made on kidneys left two, three, four, five and seven days, during which time the kidney might increase in size to compensate for the left kidney which had been removed. It appears that the kidneys left seven days did not increase more than those left two and three days. It may be inferred from this that the vicarious enlargement of the rabbit's kidney reaches its maximum before the third day.

TABLE 5.—COMPENSATORY ENLARGEMENT OF THE RIGHT KIDNEY AFTER REMOVAL OF LEFT KIDNEY

PRELIMINARY REPORT

Rabbit	Enlargement of Remaining Kidney
1	Died.
2	Measured 2.7 cm. long by 1.9 cm. from hilum to greater convexity. Four days later, measured 3.8 cm. long by 2.6 cm. from hilum to greater convexity. Increase, 1.1 cm. in length and 0.7 cm. in width.
3	Measured 2.2 cm. long by 1.9 cm. from hilum to greater convexity. Four days later, measured 3.2 cm. long by 2.3 cm. from hilum to greater convexity. Increase, 1.0 cm. in length and 0.4 cm. in width.
4	Measured 2.2 cm. long by 1.9 cm. from hilum to greater convexity. Three days later, measured 3.4 cm. long by 2.4 cm. from hilum to greater convexity. Increase, 1.2 cm. in length and 0.7 cm. in width.
5	Measured 2.3 cm. long by 2.2 cm. from hilum to greater convexity. Three days later, measured 3.9 cm. long by 2.6 cm. from hilum to greater convexity. Increase, 1.6 cm. in length and 0.4 cm. in width.
6	Measured 3.1 cm. long by 1.8 cm. from hilum to greater convexity. Three days later, measured 4.0 cm. long by 3.0 cm. from hilum to greater convexity. Increase, 0.9 cm. in length and 1.2 cm. in width.
7	Measured 2.4 cm. long by 1.7 cm. from hilum to greater convexity. Three days later, measured 3.8 cm. long by 2.9 cm. from hilum to greater convexity. Increase, 1.4 cm. in length and 1.2 cm. in width.

SUPPLEMENTARY REPORT

Rabbit	Enlargement of Remaining Kidney
1	Measured 2.8 cm. long by 2.0 cm. from hilum to greater convexity. Seven days later, measured 3.6 cm. long by 2.3 cm. from hilum to greater convexity. Increase, 0.8 cm. in length and 0.3 cm. in width.
2	Measured 2.5 cm. long by 1.5 cm. from hilum to greater convexity. Seven days later, measured 2.8 cm. long by 1.8 cm. from hilum to greater convexity. Increase, 0.3 cm. in length and 0.3 cm. in width.
3	Measured 2.8 cm. long by 1.8 cm. from hilum to greater convexity. Seven days later, measured 3.3 cm. long by 2.1 cm. from hilum to greater convexity. Increase, 0.5 cm. in length and 0.3 cm. in width.
4	Measured 2.9 cm. long by 1.8 cm. from hilum to greater convexity. Seven days later, measured 3.4 cm. long by 2.1 cm. from hilum to greater convexity. Increase, 0.5 cm. in length and 0.3 cm. in width.
5	Measured 2.6 cm. long by 1.5 cm. from hilum to greater convexity. Seven days later, measured 2.9 cm. long by 1.9 cm. from hilum to greater convexity. Increase, 0.3 cm. in length and 0.4 cm. in width.
6	Measured 2.6 cm. long by 1.6 cm. from hilum to greater convexity. Seven days later, measured 2.9 cm. long by 1.9 cm. from hilum to greater convexity. Increase, 0.3 cm. in length and 0.3 cm. in width.
7	Measured 2.7 cm. long by 1.8 cm. from hilum to greater convexity. Seven days later, measured 3.2 cm. long by 2.4 cm. from hilum to greater convexity. Increase, 0.5 cm. in length and 0.6 cm. in width.
8	Measured 2.4 cm. long by 1.6 cm. from hilum to greater convexity. Three days later, measured 2.8 cm. long by 1.9 cm. from hilum to greater convexity. Increase, 0.4 cm. in length and 0.3 cm. in width.
9	Measured 2.5 cm. long by 1.6 cm. from hilum to greater convexity. Died six hours after first operation.
10	Measured 2.8 cm. long by 1.8 cm. from hilum to greater convexity. Three days later, measured 3.1 cm. long by 2.1 cm. from hilum to greater convexity. Increase, 0.3 cm. in length and 0.2 cm. in width.
11	Measured 2.2 cm. long by 1.6 cm. from hilum to greater convexity. Five days later, measured 2.6 cm. long by 1.8 cm. from hilum to greater convexity. Increase, 0.4 cm. in length and 0.2 cm. in width.
12	Died directly following first operation.

SUMMARY

1. The rabbit normally urinates about every three hours.

2. After performing a left-sided nephrectomy, urine was not voided for from ten to eighteen hours, except in one instance, when a blue urine was voided between four and six hours. (At least three hours and probably more time must be allowed for the accumulation of urine in the bladder before it was voided.)

3. After resecting a portion of the remaining kidney, opening into the renal pelvis and closing the wound

entirely, the secretion of urine was much delayed. At the earliest, urination did not take place for from seventeen to twenty-two hours, in one instance between forty-three and forty-four hours, and usually after thirty hours. (Here, too, several hours must be allowed for the accumulation of urine in the bladder before it was voided.)

4. After resecting a portion of the kidney and draining with a rubber tube through the loin, urine was secreted in every animal before eight hours, and in most between six and seven hours. Except when the tube became dislodged from the renal pelvis, all the urine drained through the loin, none going down the ureter to the bladder.

5. After resection of a portion of the kidney and draining with gauze through the loin, urine was secreted in all the animals in six or seven hours, except in one which showed a blue fluid between four and five hours. In each instance the urine drained both through the loin and down the ureter into the bladder.

Assuming these observations to be correct, it becomes evident that following the operation of kidney resection and closure of the kidney wound entirely, there results a temporary arrest of the kidney function; that performing the same operation and draining the kidney pelvis, not closing the kidney wound entirely, does not cause a suppression of the kidney function in the same degree, at least; that when the kidney pelvis is drained by a rubber tube the drainage through the loin is freer than when gauze is employed.

I am not prepared at present to offer any explanation for the facts here stated, the physiology of the kidney being so little understood. These facts are simple observations, made as carefully as possible. It is generally believed that the variation of the secretion of the kidney depends on the blood tension within the organ, and that with increase of the blood tension the kidney secretes more, and with its diminution the organ secretes less.

In performing the operation of splitting the kidney, its blood tension must be disturbed, yet by closing the kidney wound it would seem that the tension should be greater than when drained. Accepting the idea that kidney secretion depends on its blood tension as correct, the kidney should secrete more actively when closed by suture than when drained, which is not in accord with these experiments. It may be that the nerve influence governing the arterial tension within the organ exerts a greater influence on the secretory process than does the mechanical influence of the tension of the kidney tissues, and that by entirely closing the kidney wound the nerve influence is disturbed in a greater degree than when the wound is but partially closed.

Further experimental work will be directed toward establishing the facts here stated as correct, and then making observations on the kidney secretion with changes in blood-pressure, and if possible, the elimination of the nerve influence.

46 Gloucester Street.

The Abdominal Woman.—There is one kind of patient in whom the presence of membranous colitis should always be strongly suspected, and that is what we may speak of as "the abdominal woman." You all know the type; those who have been in practice know her only too well. You remember her constant state of misery and dejection, her obstinate constipation and flatulence, her frequent complaint of vague abdominal discomfort or pain. In such a case you will often find that mucomembranous colitis is the fountain of all the patient's ills.—Robert Hutchison, in *Clin. Jour.*

THE DIAGNOSIS AND INDICATIONS FOR OPERATION IN EARLY HYDRONEPHROSIS *

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The classical conception of hydronephrosis with a much-dilated pelvis, dilated calices and thinned cortex is not the view of the subject to which I desire to call attention. From the surgical point of view, comparatively little interest attaches to these extreme cases in which the surgeon steps in only in time to relieve the patient of his symptoms and at the same time of his kidney. This is the destructive aspect of surgery and it is the business of modern surgery to deal largely with the constructive side. We should regard hydronephrosis as existing in a given case when any dilatation of the renal pelvis due to obstruction has occurred. Were hydronephrosis always appreciated at its inception, nephrectomy for this condition would become a surgical curiosity. Progress in the diagnosis of lesions of the upper urinary tract has of late years been so rapid, and we have now advanced to a point where diagnosis can be so accurate that the time has come when the diagnosis of hydronephrosis should be demanded at a time when damage to the kidney has been so slight as to be curable.

It should be appreciated at the outset that if we depend on the classical symptoms of intermittent pain, tumor and sudden increase in the quantity of urine, the diagnosis will never be made in time to be of important service to the patient. In fact, the symptoms alone differ in no important particular from those caused by entirely different conditions. Hydronephrosis may be and frequently is confused with any of the conditions giving rise to pain in the upper quadrants of the abdomen, more commonly, of course, in that most difficult segment — the nightmare of the unwary — the upper right quadrant.

CAUSES OF HYDRONEPHROSIS

Though any condition producing obstruction to the ureter in any portion may lead to hydronephrosis, two causes stand out preeminently in the production of this condition:

1. *Mobility of the Kidney without Corresponding Mobility of the Upper Portion of the Ureter.*—The movable kidney has waxed and waned in its popularity as an indication for surgical operation according to the fashion of the day and the enthusiasm of the surgeon, but I believe that the time has now arrived when it is possible to state with great accuracy which cases of movable kidney are productive of symptoms and should therefore be treated by operation and which should be regarded as interesting but unimportant discoveries. One of the most important indications for surgical treatment is the tendency of mobility to obstruct the outlet of the renal pelvis and become a potential cause of hydronephrosis. This will occur when the amount of mobility of the kidney is disproportionate to that of the upper segment of the ureter. The immobility of the ureter may be due to its natural attachments and fascial band or to a slight grade of pyelitis and ureteritis, such as commonly occurs in these movable kidneys. When we see the extraordinary contortions through which the movable kidney goes, it is, on the whole, surprising that

* Read in the Symposium on Renal Surgery and Pathology in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

the ureter is able to keep pace with these gyrations as well as it does and that obstruction or kinking does not more commonly result.

2. *Abnormal Renal Vessels.*—Abnormal vessels running to the lower pole of the kidney are by no means uncommon (from 2 to 4 per cent.) and some abnormality of the renal arteries has been shown to exist in something like 25 per cent. of all cases. These abnormal vessels, even though they run to the lower pole and thus across the renal pelvis, are not in and of themselves often a cause of hydronephrosis. As has been pointed out by Kelly, they should be regarded as potential causes, becoming active only when the mobility of the kidney causes them to cut sharply across the pelvis. It is impossible to say, from any data now at hand, the proportion of cases in which abnormal vessels play a part in producing obstruction of the pelvis. The experience of some operators would make it appear very common, while in that of others it is the exception. It must be generally admitted, however, that they are a not infrequent source of trouble.

SYMPTOMS IN EARLY CASES

Let it be remembered at the outset that I am not here discussing the symptoms caused by advanced hydronephrosis. The early cases present symptoms generally regarded as characteristic of other conditions and may be divided roughly into three groups:

1. *Cases Suggesting Stone in the Kidney.*—This group has the classical symptoms of renal calculus—sudden attacks of pain, referred to the region of the kidney, sometimes transmitted downward along the course of the ureter, not infrequently accompanied by nausea and sometimes by vomiting. The urine shortly after the attack will show a few blood-corpuscles and a trace of albumin. Nothing short of the most searching examination will differentiate these cases from those of renal calculus.

2. *Cases with Symptoms of Stone in the Kidney but Without Abnormality of the Urine.*—This group shows all the symptoms outlined above but a persistently normal urine. This, however, is by no means sufficient to clear up the point, as it is well known that renal calculus may exist and cause symptoms, without any change in the urine which can be detected.

3. *Cases Simulating Acute Infections of the Kidney but with a Persistently Sterile Urine.*—This is fortunately a small class of cases, but is extremely puzzling and, when better known, may prove to be less rare than we have supposed. The two cases which I have seen and studied were extremely puzzling. In both there were attacks of pain, with painful and frequent urination, most troublesome when the patient was up and about. The urine contained pus and blood in considerable quantity, and the suggestion of renal tuberculosis was strong. The true diagnosis was not suspected until after repeated cystoscopic examinations, which revealed a surprisingly normal bladder, clear evidence of irritation of the kidney on the affected side and a urine which was sterile to ordinary cultures and which proved free from the tubercle bacillus by repeated guinea-pig inoculations. The following case is inserted here in order to make the picture clear:

CASE 7.—*History.*—R. S., aged 17, nursemaid, two or three years before she came under observation began to have some bladder irritability and occasional attacks of pain in the right side. Two years before examination appendix was removed. In April, 1911, bladder irritability became severe and urine at this time contained pus and blood. There was also pain in the back, chiefly on the left side. Cystoscopy at this time showed the bladder pretty red, redness being most marked around the left ureteral orifice. Both ureters were catheterized; urine from the left side contained pus and blood; that from the right side only blood-corpuscles. Cultures remained sterile and guinea-pig inoculation was negative for tuberculosis. So strong was the suggestion of tuberculosis that the catheterization was repeated in October, 1911, with the same result. Three separate sets of guinea-pigs all remained negative for tuberculosis. When the patient was seen in December, 1911, physical examination was negative except for slight costovertebral tenderness on the left. Urine at this time showed no albumin, a few red blood-corpuscles and epithelial cells. A radiogram taken after injection of the renal pelvis showed slight dilatation and a kidney which descended about 3 inches when the patient was in the erect position.

Operation.—In December, 1911, the kidney was exposed by a lumbar incision and found very freely movable, without abnormal adhesions. The kidney capsule was stripped and kidney fixed in normal position.

In May, 1912, the patient had had no further bladder irritability though she had a slight amount of pain in the left side. The urine was normal.

DIAGNOSIS

The nature of such cases will be justly appreciated only as the result of searching diagnostic methods, such as have only recently been possible. Diagnosis must be based first on convincing evidence of obstruction to the renal pelvis, though it is by no means necessary that any considerable degree of dilatation should have taken place. In fact, many of these cases will have increased irritability of the renal pelvis which will produce an apparent decrease in its capacity, thus giving rise to the belief that it is contracted. Obstruction having been demonstrated, it is further necessary to show that other possible causes of the symptoms are absent and that distention of the renal pelvis will reproduce the pain of which the patient complains. These requirements will be fulfilled only by the convincing exclusion of stone in the kidney, infections of the kidney—particularly with the tubercle bacillus—and by the reproduction of the pain by distention of the renal pelvis.

IMPORTANT DIAGNOSTIC METHODS

I have already pointed out that the symptoms are but a fallacious guide to the diagnosis of this condition and it may here be further added that the general physical examination will add equally little of value. The routine examination of the urine is practically without value, for any suggestions thus obtained will be more likely to point to other conditions than to early hydronephrosis. Nothing of importance can be learned except with the aid of the cystoscope and ureter catheter. The cystoscope alone is of little value, as examination of the bladder never gives important assistance. Catheterization of the ureter, with distention of the renal pelvis, gives some help but will allow of a positive diagnosis only when considerable dilatation has occurred and would entirely fail to reveal the cases with an irritable and therefore apparently contracted pelvis. In and of itself, *x*-ray examination is of value only on the negative side. It will exclude renal calculus and aid in the exclusion of renal tuberculosis, but cannot show the position or outline of the renal pelvis. Only by a combination of the *x*-ray and ureter catheter, which enables the surgeon to inject the renal pelvis with silver salts (which cast a shadow) can the exact size, position and relations of the renal pelvis be studied. In a word, pyelography is the main stay of diagnosis.

Though the method was originated by Voelcker of Heidelberg, much credit belongs to Braasch of Roches-

ter, Minn., for the development of this method. With good technic, it is possible to show the outline and position of the renal pelvis in all cases and diagnoses of surprising accuracy can be made by skilful operators. In order to make the demonstration convincing, after injection of the kidney pelvis, radiograms should be taken with the patient in the horizontal and vertical positions, thus showing the position of the pelvis when the kidney is normally placed and its change of position in relation to the ureter, when the kidney descends. Some excellent work along these lines has been done by Fowler of Denver.

The methods of diagnosis having been thus outlined in general, it becomes important to discuss the exact point at which we should regard a pelvis as becoming abnormal. At present, as far as I am aware, there is no general agreement on this point. Thus, Braasch, in a paper written October, 1909, and published in April, 1910, illustrates as normal three pelves which I should regard as decidedly abnormal, one of them (Fig. 1) corresponding almost exactly with a case described by Keyes and MacKee in 1909 as "resembling a brimless derby hat." Mere size is not, within reasonable limits, to be regarded as of absolute diagnostic value, for a

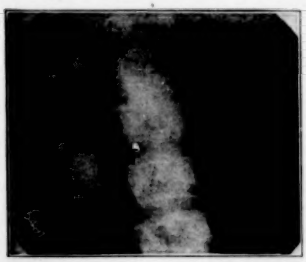

Fig. 1.—Kidney pelvis described by Braasch as normal, but corresponding with the "black-hat" pelvis of Keyes and MacKee.

Fig. 2.—Considerably dilated renal pelvis in a patient (Case 2), whose symptoms began four years earlier; from a radiogram made after injection of renal pelvis.

Fig. 3.—Kinking of ureter (Case 3), from a radiogram made after injection.

dilated pelvis may be abnormally irritable, while a normal pelvis may be abnormally insensitive. The important point seems to me to lie in the question of the relation of the pelvis to its outlet. The ureter should leave the pelvis at its lowest point and the junction of the pelvis with the ureter should not be unduly abrupt. The "black-hat" pelvis, to borrow Keyes' term, is characterized by a dilatation along its lower border so that it meets the ureter very abruptly and has seemed to me clearly abnormal, both on account of its appearance when radiographed after injection and on account of the complete relief of symptoms which have followed operation for this condition. On this point I am not in accord with the views of Braasch. It is, however, not sufficient to demonstrate slight changes in the contour of the renal pelvis. It must further be shown that this change in contour is due to a position which the kidney takes in relation to its ureter and which is sufficient, in and of itself, to cause obstruction and lead to dilatation. I would exclude entirely any measure of pelvic capacity as of diagnostic importance and believe that it serves only to confuse when an attempt is made to arrange as surgical those pelves which hold more than, for instance, 30 c.c. The condition is, after all, a potential one and if we wait until dilatation of any considerable amount has taken place, the kidney will in many cases become infected and can with difficulty, if at all, be restored to a normal condition by surgical intervention.

Though somewhat beside the point, I wish to point out here that the most potent cause of pyelitis is, in my opinion, to be found in moderate obstruction of the renal pelvis and that further study along these lines will cast light on the etiology of the now obscure cases of idiopathic pyelitis.

INDICATIONS FOR OPERATION

From what has already been said, it will appear that I do not believe that indication for operation should be based on any measure of capacity of the renal pelvis. The indication lies in the proof that obstruction of intermittent character exists to the outflow of urine from the pelvis, and that this obstruction is the cause of symptoms which are not caused by some other coexisting condition. Mere mobility of the kidney is wholly unimportant. In many of the cases, particularly those occurring on the left side and in strong muscular men, no mobility of the kidney can be demonstrated by ordinary methods. Convincing evidence can be obtained only by the radiogram taken after injection, the reproduction of the symptoms by distention of the renal pelvis and the exclusion of the other conditions which could cause the symptoms, chiefly, renal infections, renal calculus and gall-stones.

ILLUSTRATIVE CASES

I append some reports of cases which illustrate the methods of diagnosis, the general classes of cases in which the symptoms occur and the relief of symptoms following operation.

GROUP I

CASE 1.—*History.*—I. M. N., aged 25, nurse, in February, 1909, had an attack of abdominal pain lasting on and off for three or four weeks, accompanied by diarrhea with pain chiefly in the right side. At this time the urine showed the slightest possible trace of albumin, a few red blood-corpuscles and renal cells. Subsequent to this attack, a doubtfully diseased appendix was removed. The following June the pain in the right side returned, this time accompanied by some frequency and pain on micturition. The urine at this time again showed the slightest possible trace of albumin, but without pus or blood. Skin tuberculin reaction at this time was negative. In Octo-

ber, 1910, patient had a severe attack of pain in right flank, radiating to the groin, and an enlarged tender kidney could be felt. The urine showed the slightest possible trace of albumin, a few red corpuscles and leukocytes. Culture showed colon-like bacilli. This attack lasted for three weeks during most of which time there was some pain and tenderness in the region of the kidney. Following that time the patient had had several mild attacks of similar character which generally came on when she had been working hard, and which made it impossible for her to do her work with certainty. Operation was therefore advised.

Operation.—In April, 1912, the kidney was exposed by a lumbar incision, found very freely movable and the capsule abnormally adherent. The ureter was firmly bound to the lower pole of the kidney by abnormal adhesions. These adhesions were freed, capsule stripped, and the kidney fixed in normal position.

CASE 2.—*History.*—E. G. H., aged 29, housewife, in January, 1908, entered Massachusetts General Hospital on account of griping pains in the back, in the region of the right kidney, radiating to the bladder. There were no urinary symptoms. The right kidney was easily palpable. *X*-ray was negative for stone. The urine was normal in all respects. No satisfactory diagnosis was made and patient was discharged without treatment. In February, 1909, patient again reported with the same symptoms but refused to enter hospital. October, 1911, she again entered the hospital; the same symptoms had continued, but on this occasion she was admitted on account of a subacute salpingitis on the left side, for which she was operated on. She was next seen in January, 1912. Urine showed pus and many colon bacilli. Cystoscopy showed urine from right ureter cloudy, containing much pus and epithelial cells. That from the left was normal. Function, tested by phthalein (intravenous method), showed 12 per cent. on the right, 18 per cent. on the left. *X*-ray was negative for stone. Cystoscopy, repeated in February, showed renal pelvis on right to have a capacity of 40 c.c., at which amount the pain of which the patient complained was reproduced. A radiogram, made after injection, showed a considerably dilated pelvis (Fig. 2).

Operation.—In May, 1912, the kidney was exposed by an oblique lumbar incision and found very freely movable with some abnormal adhesions to the fat capsule. The surface of the kidney showed marked indentations and lobulations apparently due to contraction of scar tissue. The pelvis was much thickened and considerably dilated. The ureter was firmly adherent to the lower pole of the kidney where kinking had apparently taken place. The capsule was stripped and the kidney anchored in normal position.

This case is an excellent example of the point to which attention was called at the beginning of this article. When first seen, four years ago, the condition was such that with modern methods diagnosis could have been made and the condition remedied. During the four subsequent years, dilatation of the pelvis has continued, infection and infiltration of the pelvis and probably of the kidney has occurred and some of the damage is undoubtedly permanent.

CASE 3.—*History.*—K. Q., aged 25, housewife, five years before coming under observation had median laparotomy at Bellevue Hospital but was not clear as to what was done. About two years later she began to have attacks of pain in the right side, coming on suddenly, without relation to food, position or time of day. No change in the amount and character of the urine was noted. Many *x*-rays were persistently negative, but three months before I saw her she was operated on at another hospital and the kidney explored under the belief that a stone must be present. Nothing was found and the wound was closed. The symptoms were somewhat relieved for two months but had now returned. The pain was sharp, colicky, did not radiate and always caused nausea and vomiting. The patient had had chilly sensations and felt feverish during attacks but did not know that temperature had been elevated. Examination was negative except for the scars of the two previous operations and a palpable moderately movable right kidney. The urine was normal and repeatedly negative to cultures. Kidney function was normal. A radiogram made after injection showed distinct kinking of the ureter (Fig. 3).

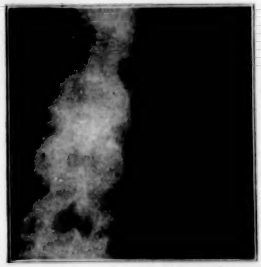

Fig. 4.—Moderate kinking of ureter at urethropelvic junction (Case 5). Symptoms not of long duration.

Fig. 5.—The "black-hat" pelvis. Note the abrupt junction of pelvis with ureter.

Fig. 6.—Pyelitis of the recurrent type associated with mobility of the kidney; from a radiogram made after injection of the renal pelvis.

Operation.—In January, 1911, the moderately movable kidney was delivered through a 6-inch lumbar incision. The ureter was much bound down by recent adhesions so that it was impossible to say to what extent these were simply the result of previous operations. The ureter and pelvis were freed from adhesions and kidney fixed in rather high position. The patient was subsequently lost sight of.

CASE 4.—*History.*—J. A. M., aged 28, trained nurse, three days before examination had an attack of sudden severe pain in the lower back, on the right side, with painful and frequent urination; no fever. Examination was negative except for a large, readily palpable, tender right kidney. *X*-ray at this time was negative for stone, but showed the right kidney apparently enlarged. Cystoscopy showed a normal bladder. The right ureter was catheterized and found free from obstruction; the urine was not abnormal. Cultures were negative. Guinea-pig inoculation was negative for tuberculosis. Repeated *x*-rays were negative for stone. Patient reentered hospital, January, 1912, with a similar attack, having had some bladder irritability in the meantime. In this attack the pain started suddenly in the right loin, shooting downward and forward. Urine at this time was entirely normal. Cystoscopy again

showed the bladder normal. Injection of right renal pelvis showed it to have a capacity of 35 c.c. without leakage. *X*-ray was again negative for stone.

Operation.—In February, 1912, the kidney was exposed by lumbar incision and found very movable without abnormal adhesions but with a moderately dilated renal pelvis. The capsule was stripped and the kidney fixed in normal position.

In May, 1912, patient had returned to her work; was free from symptoms.

CASE 5.—*History.*—M. W. M., aged 49, carpenter, for six months had had a somewhat indefinite pain in the back which troubled him chiefly when he was up and about and was relieved after a short time by the recumbent position. This pain was sufficiently severe entirely to prevent him from working. Three weeks before examination he was wakened in the night by a sharp pain in the left loin which did not radiate, which lasted for twelve hours and was relieved only by morphin, and which accompanied and was followed by considerable vomiting. Two days later, he passed a pea-sized stone from the bladder. This attack produced no effect on the pain above described. The urine had always been normal. Cystoscopy was entirely negative. A radiogram taken with stiletted catheter in place strongly suggested kinking of the left ureter. Two days later, a radiogram of the injected renal pelvis showed distinct dilatation, with kinking of the ureter (Fig. 4).

Operation.—May 23: The left kidney, delivered through a somewhat oblique lumbar incision, was found very freely movable and markedly lobulated with portions of the cortex somewhat thinned. The upper portion of the ureter was found markedly bound to the lower pole of the kidney by abnormal bands of fibrous tissue. After the ureter was freed from these adhesions, the kidney was fixed in its normal position. The wound was closed.

CASE 6.—*History.*—A. D., aged 31, Italian shoemaker, five years before coming under examination began to have attacks of pain in the right flank, made worse by bending over. In these attacks the pain came on rather slowly, increased for a few days and then diminished and disappeared. It was not rapid or sudden. There was no change in urine, so far as the patient was aware; no gravel. He had his appendix removed without relief of symptoms. Examination was negative, except that on deep pressure under the right costal margin there was some tenderness and this started a pain which the patient described as running down into the pelvis. Cystoscopy showed the bladder normal; the ureters were catheterized easily and free from obstruction. The urine obtained from both kidneys was apparently normal. Sediment from right side was inoculated into a guinea-pig; the subsequent report showed no tuberculosis. Dec. 15, 1911, there was recurrence of pain; the urine was clear and clean, with rare shreds. The right ureter was catheterized with No. 6 which passed to kidney. The urine was examined for culture and sediment and showed no bacterial growth. Methylene-blue and boric acid (8 c.c.) injected caused pain, and fluid then came back around catheter. Pain was in same place but not so sharp as usual. *X*-ray plates were made with the patient prone and standing with 7 c.c. collargol in pelvis. About 15 c.c. of collargol and urine were obtained when ureteral flow was again released (Fig. 5). December 26, *x*-ray showed movable kidney. December 30, admitted to house.

Operation.—Jan. 3, 1912, nephropexy for (right) nephroptosis was performed. January 16, patient was discharged to out-patient department. May 23, he had had only two or three slight attacks of pain since operation; had been at work. Urine was clear with shreds. There was no albumin. The scar was firm.

GROUP III

CASE 7.—This case, which was reported earlier in the paper (R. S.) should be regarded as belonging to this group.

CASE 8.—*History.*—L. L., aged 21, factory girl, six months before coming under observation began to have pain in the left side, which came and went in irregular fashion; it might last for a week and be absent for a week or more. Pain was never sharp but dull and, again, sufficient to disturb sleep. It did not radiate. There was some frequency of urination, particularly at night. Physical examination was negative except for slight tenderness to the left of umbilicus and on one occasion the left kidney was felt. Cystoscopy showed considerable injection of the bladder, most marked about the left ureteral orifice. Three days later both ureters were catheterized. Showed a very free flow of an apparently normal urine from both sides. Guinea-pig inoculation made from urine obtained at this time subsequently reported negative. Collargol injection showed the rather curious appearance of the renal pelvis reproduced in Figure 6. Urine at this time showed considerable pus and blood but repeated cultures are negative.

This case seems to me clearly to belong to Group III, although the proof by operation has not been forthcoming up to the present time. The patient was allowed to leave the hospital because my colleagues and I were so much in doubt of the diagnosis and so inclined to regard the kidney as probably tuberculous. Subsequent developments have altered our conclusion.

87 Marlboro Street.

THE FUNCTION OF THE URETEROVESICAL VALVE

AN EXPERIMENTAL STUDY OF THE FEASIBILITY OF URETERAL MEATOTOMY IN HUMAN BEINGS

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The idea of removing ureteral calculi by slitting the ureterovesical valve is not new. From the point of view of physiologic surgery, however, the relative value of this valve to the animal economy has not yet been made clear. Alexander Pappa says: "Direct-vision cystoscopy makes it possible for the operator to seize the calculus which shows in the bladder, makes possible also the enlargement of the ureteral meatus and even occasionally the incision of the meatus on the stone which enables it to be liberated." In the discussion of an operation for prolapsed ureter, Albarran states: "The bladder having been opened through a hypogastric incision, one cut of the scissors enabled me to section at once both the upper margins of the ureteral orifice and the bladder wall for the distance of a centimeter." It will be noted that this work was done from above rather than through a cystoscope. Albarran further says: "The results of the operation were not so good so far as affording symptomatic relief. A second cystoscope examination was therefore made and the orifice of the ureter operated on was seen to be enlarged and passing urine in very feeble jets." The significance of this statement and its relations to Cathelin's views will be referred to later.

Thompson reports having incised the mucous membrane of the bladder for the transvesical removal of a stone from each ureter with success. Wullf reports a case in which a ureteral calculus was removed by means of galvanocauterization of the ureteral orifice.

Kropeit removed stones which had lodged at the ureteral orifice in two cases. In the first patient he was able to effect the removal by means of the operative

* Read in the Symposium on Renal Surgery and Pathology in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* Studies from the Laboratory of Surgical Chemistry and Physiology and from St. Mary's Hospital, Rochester, Minn.

cystoscope. In the second, the stone could not be grasped by the forceps and he therefore slit the ureteral valve by means of the galvanocautery. Two days later the calculus was discharged spontaneously.

Kelly has demonstrated the feasibility of operating on the vesical end of the ureter by means of forceps and sounds through his female cystoscope.

Bransford Lewis has reported the removal of a number of calculi by means of his operative cystoscope.

One of us (Braasch) has removed ureteral calculi in sixteen instances through the operative cystoscope by dilatation of the ureteral orifice and by means of manipulation through the use of ureteral sounds or catheters.

W. J. Mayo has by transvesical operation removed stones by manipulation and dilatation of the ureter through the bladder.

While such dilatation of the meatus and manipulation of the ureter with sounds, etc. will dislodge a small proportion of ureteral stones, there will be a larger proportion which will require actual incision of the ureter to remove them.

In general, however, the literature bearing on actual section of the valve is very sparse. Actual section of the valve, particularly through the operative cystoscope, in the occasional instances in which it has been practiced, appears to have been done on the spur of the moment without much opportunity for forethought or afterthought by scattered observers whose final results have not yet been tabulated. Immediate operative success is in itself no guarantee or safeguard against remote injury due to operative destruction of structures which may be necessary to the maintenance of metabolic equilibrium or for the mechanical protection of local regions. If the general views as to the importance of the protective mechanical function of the ureteric valve are to be accepted without qualification, its destruction would certainly appear to be so serious a matter that operators would naturally hesitate to slit it in preference to opening the ureter from above.

The fact, however, that but a single immediate fatality due to intraperitoneal leakage from the bladder and no chronicle at all of serious after-results has been found reported in the literature by us has seemed to point definitely to the immediate safety of meatotomy. This fact, together with the knowledge that in recent years a great deal of important new information has been elicited regarding the physiology and pharmacology of the ureter which appears to have important bearing on the applied surgery of the bladder, led us to begin these experimental studies. It tended also to make the portion of the study relating to the immediate operative danger more or less corroborative in character, the final trend of the research being directed rather toward an interpretation of the possible remote results of meatotomy should any be observed.

SAFETY OF URETERAL MEATOTOMY

The problem regarding the safety of ureteral meatotomy in human beings resolves itself into the following terms: 1. Is it a safe procedure from the point of view of hemorrhage and sepsis due to accidental perforation of the bladder? 2. What ill result, if any, is to be expected from the destruction of the valve and the loss to the individual of its mechanical function? The latter question is further divisible into two: (a) danger from ureteral reflux, dilatation and accompanying ascending infection; (b) danger of a remote character associated with the impairment of kidney function due to changes in intra-ureteric and renal pelvic pressures.

In the human being there is no artery of normal distribution in the valve which is of sufficient size to be worthy of consideration. This has also been observed true in our experiments in the dog. The chance of an aberrant artery crossing the valve in such a position as to be cut is also so remote as to be negligible. The valvular blood-vessels in the human bladder consist largely of a venous plexus which surrounds the vesical termination of the ureter and which may be a continuation of the well-known plexus which surrounds the bladder. These histologic studies of the ureteric valve served to strengthen the impression already gleaned from the operative experience of others that the probability of immediate or remote hemorrhage from cutting the valve either in man or in dog is so slight as to be negligible.

The peritoneal investiture of the vesical extremity of the ureter as well as the blood-supply of the part in the dog present such anatomic conditions (Fig. 1) as to make it difficult without great carelessness to slit the ureteric mouth so far as to penetrate the bladder wall. A well-defined sheath, which in its caudad 2 or 3 cm.

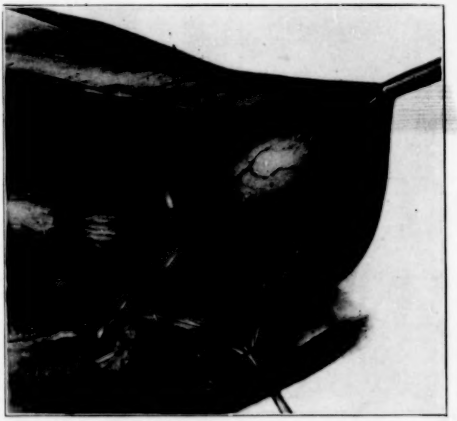

Fig. 1.—Bladder of dog pulled outward to show the vesical extremities of the ureters and extent of peritoneal covering.

is a very dense and fibrous structure, surrounds the dog's ureter. As regards the anatomy of the part in the human being, it closely resembles that of the dog. Piersol, quoting Waldeyer, says: "The last 18 mm. of the renal duct are imbedded within the vesical wall; the muscular tissue of the latter is seemingly prolonged over the ureter outside of the bladder for some 5 mm. as a distinct sheath. Beginning several centimeters above the bladder the adventitia of the ureter is strengthened by longitudinal bundles of involuntary muscle, that follow the duct to its vesical orifice and in conjunction with the fibrous tissue in which they are imbedded, form the ureteral sheath." Following Disse, Piersol considers that "this muscle belongs to the wall of the ureter and is distinct from the musculature of the bladder."

In regard to the valve he says:

> As the oblique course of the ureter . . . leaves it on the inner aspect covered by mucous membrane only, and as the outer aspect is covered by the muscular layer of the bladder wall, it can be understood that the incision of the

mucosa over the intraparietal part of the ureter, for the purpose of extracting a calculus, involves little risk of pelvic cellulitis from extravasation of urine. It cannot be said that there is no risk, as in one case a parietal fistula was established and death resulted.

It has seemed to us from a study of the very thick-walled dog's bladder that there occurs a great variation in the course and obliquity of the vesical portion of the ureter depending on the degree of dilatation or contraction of the bladder. This organ is subject to continual changes in size, as Howell states, owing to the fact that "every physical act and every sensory stimulus is apt to cause a contraction." This fact is also well known to every cystoscopist who has met with an anatomic or physiologic obstruction to the ureteral catheter at this point. As the bladder dilates, the size of the opening just at the point of entry through the mucosa is apparently not so much affected owing to the oblique insertion as it would be if the entrance were direct. It may well be that this is one of the reasons for and uses of the oblique insertion.

Fig. 2.—Mesoventrad incision in bladder, showing Abbott's method of exposing trigone without traumatism to mucosa.

EXPERIMENTAL TECHNIC

The method which we have found satisfactory for cutting the ureters in dogs is a simple one. It was devised by Abbott in this laboratory (Mayo clinic). Prior to its employment we were much troubled by oozing from the bladder. This is apt to be quite free if the epithelium be traumatized by even a gentle touch of the finger. Considerable traction may be made on it in using Dr. Abbott's method of evagination without causing this annoying sequel.

All animals were operated on under complete ether anesthesia. The bladder was opened by median ventrad incision about 2 cm. in length, having its point of origin well toward the neck of the bladder. The viscus was then evaginated on the operator's index-finger which is applied to the dorsal surface (Fig. 2). By this procedure the ureteric slits were usually brought into plain view and could be cut out with a small pair of slender-bladed scissors. Great care should be taken not to handle the mucosa or to bruise it in any way because even the most delicate touch is apt to cause it to become obscured. We have usually cut the valve until the tip of the scissors blade was felt to be distinctly against the wall of the bladder. The incision thus made has in our experience averaged slightly less than 1 cm. in length and it has never approached dangerously near to the peritoneal aspect of the bladder.

The slitting of the meatus was done suprapubically because of its being difficult to do the operation on a dog through a cystoscope. The dog's bladder is so contractile that it requires much more water-pressure to disfend it than in the case of the human bladder. Ordinary operative cystoscopes do not work favorably under this increased pressure and the valve cannot be conveniently cut in a contracted bladder.

In order to obtain a series in which chronic cystitis had existed in conjunction with slit valves, we introduced an insoluble foreign body into the bladder just after the valves had been cut. Just prior to introduction, this was thoroughly infected with colon bacilli and other organisms of autogenous origin. The presence of such a foreign body within the bladder appears to be necessary in order to create conditions which bear resemblance to the symptom-complex of human cystitis. In general, no difference was to be observed clinically between the animals which had infected bladders and those in which no insoluble material was used. Although pus cells and micro-organisms were present in urine which was removed under sterile conditions from all the bladders subjected to this foreign body treatment, the histologic findings in the kidneys were as negative in the infected series as in the uninfected. Curiously enough this appears also to be true as regards the finding of bacilli in the wall of the bladder or in the kidney. In one case in particular (205) in which the urine was loaded with pus cells and organisms, no bacilli and not even round-cell infiltration could be demonstrated deep in the wall of

TABLE OF RESULTS *

No. Dog	Sex	No. of Ureters Slit †	Insoluble Substance in Bladder	Days After Oper	Young's Test	Urinary Findings	Gross Findings	Microscopic Findings	Remarks
150	M.	⇄	—	163	A few drops solution in left renal pelvis.	Negative.	Left ureter shade larger than right; no dilatation.	Negative.	
156	M.	⇄	—	133	.....	Negative.	Right ureter dilated.	Negative.	Killed fighting.
158	F.	⇄	—	134	No solution entered ureters.	Negative.	Ureters and kidneys normal.	Negative.	Bladder burst at 10 ft. pressure.
160	M.	<	—	126	No solution entered ureters.	Negative.	Ureters and kidneys normal.	Cloudy swelling.	
162	M.	⇄	—	116	Left ureter filled.	Negative.	Ureters and kidneys normal.	Negative.	Bladder burst at suture line at 10 ft. pressure.
185	M.	<	+	64	No solution entered ureters.	Pus cells; organisms; no casts.	Ureters and kidneys normal.	Negative.	
200	F.	⇄	+	66	Few drops on right side only.	Bacilli; cocci; pus cells; no casts.	No dilatation of ureters.	Negative.	Gram-neg. bacillus, probably colon; 3 weeks pregnant.
205	M.	⇄	+	54	.....	Great deal of pus and many organisms; no casts; blood.	Kidneys normal; no dilatation of ureters.	Cloudy swelling.	
207	F.	⇄	+	36	.....	Pus; some organisms; no casts.	No dilatation of ureters; bladder inflamed.	Cloudy swelling.	Gram neg. bacillus, probably colon; cocci.
208	M.	>	+	24	.....	Some pus cells; strept. and staph.; no casts.	No dilatation of ureters; bladder inflamed.	Cloudy swelling.	All ureters permeable; no effort at healing seen in any case.

* Clinical conditions good in all; no bacilli found in tissues of any. † In this column > stands for "right;" < for "left," and ⇄ for "both."

the bladder. Although the urine was foul, the infection had been strictly limited to the most superficial cells. This observation may have important bearing on the caution which should be exercised in translating our deductions from animal studies to man. Physical conditions may be made as nearly analogous as possible but the differing biochemical reactions remain profoundly difficult of interpretation. This is one reason for regarding our work, even if it were further advanced, as confirmatory rather than conclusive.

RESULTS OF EXPERIMENTS

Before sacrificing the animals with chloroform they were in some cases subjected to the test devised by Young. The results of this test showed that if the physiologic activity of the ureter were not impaired it was equally difficult to inject the renal pelvis whether the ureterovesical valve had been slit or not.

In a single case only was there ureteral dilatation. This may or may not have been caused by the mechanical pressure of reflux, either in whole or in part. The dilatation occurred as in man at the cephalad and caudad extremities. Such dilatation is probably not entirely if at all of mechanical origin, a case in point being the well-known difficulty of producing dilatation of the stomach by duodenal obstruction. Dilatation of mechanical origin exists, but it occurs at the point of obstruction rather than at a distance from it. It is probable, therefore, that both biochemical and physiologic factors enter in as causative agents when any organ dilates.

One kidney presented a depressed lesion about 1-5 cm. in length by 1-5 cm. in width. It might have been caused by an infarct due to infection from the bladder but was probably the scar of an old traumatism.

ACTION OF THE URETEROVESICAL VALVE

The more fundamental portion of th problem now awaits discussion. That the ureterovesical valve exerts under certain conditions a check-valve-like action on the contents of the bladder is not to be denied. It is cited in every text-book. So long ago as 1898 Young in an exhaustive series of experiments both in dogs and in man demonstrated that this action exists. He injected staining material at a pressure of 11 feet and found that in no case was there reflux into the renal pelvis or ureters. The valve held even in human cadavers, in which the ureters were obviously passive. The correlation of this excellent physical study with the physiologic and pharmacologic studies of more recent years seems to us of great importance.

Maydl's classic experiments have also been rightly accepted as demonstrating the mechanical action of the ureterovesical valve, despite the fact that meatal transplantation has not in general given satisfactory operative results. Indeed, so fixed in the minds of surgeons is the idea that an oblique valvular entrance is necessary for protection when any duct enters a viscus that many ingenious forms of technic have been devised to effect or to preserve it. Notable among these have been the measures of Sullivan and of Coffey, who have elaborated skilful methods with special view to a preservation of the oblique duodenal entry of the common bile-duct.

Until recently, with few exceptions, all efforts to utilize the septic bowel as a urinary reservoir have signally failed. Has this been because of the destruction of the ureterovesical valve alone? This has been the general opinion in the past. Has not the physiologic element in connection with this problem been overlooked? If it be true that Nature has provided an abundant "factor of safety" in combining both physiologic and mechanical factors in protecting against reflux, then it may well be that the failure to make a vicarious bladder out of the bowel has been due to the destruction of the mechanical protection coupled with such serious impairment of the physiologic defense as entirely to overbalance the "factor of safety." Such physiologic impairment may well be accomplished by the injury to the ureter consequent to its transplantation. Dudley Tait (personal communication) may be quoted as saying that the explanation of the recent occasional success of the ureteral rectal implantation should be attributed to the careful protection of the ureter from traumatism by the modern technic. This has been accomplished by discontinuing the use of a permanent catheter after transplantation and by minimizing the number of stitches taken in the ureter. This is directly in line with the idea that reflux is prevented much more by the ureter itself than by the obliquity of its valve. Tait also holds that the importance of the mechanical action of the valve in preventing reflux has been exaggerated.

This consideration calls to mind the history of the patients in whom a mechanically corresponding valve, that situated at the papilla of Vater, was slit in the transduodenal operation of McBurney for the removal of gall-stones. This operation was done many times and, so far as is known, without grave injury to the patient by reason of reflux of duodenal contents into the common bile-duct, liver or pancreas. It would appear, therefore, that the destruction of this mechanical safeguard must have placed the work of preventing such reflux on the physiologic function of the duct. This implies that the "factor of safety" regarding the prevention of reflux into the liver as well as into the kidneys is in each case a double one formed by a combination of a mechanical valve and a physiologic contrivance.

Physiologists and anatomists alike, while universally drawing attention to the fact that the mechanical arrangements for the valve are such as to protect the ureter from the transmission of intravesical pressure, do not state that this is its solitary function nor do they summarize the conditions which would obtain if the valve were destroyed. Here we are on the borderland between surgery and physiology and evidently at a point where the first cannot safely advance except through the help of the second. Have we not, in considering the ureteral valve as the paramount protector of the ureters and kidneys from dangers arising from below, been somewhat biased because of having reasoned from a morphologic point of view alone? Have not the underlying principles of physiology and chemistry been overshadowed and forgotten in the tacit acceptance of this purely morphologic explanation? Indeed, it appears to us that the well-known difficulty of reproducing in animals the analogues of human disease, even though all the evident morphologic and physical conditions be duplicated, should suffice to show us that in the discussion of this as well as of other surgical problems, in considering form alone surgeons have as yet taken only the first primitive step. Were we to attempt to reproduce the ordinary symptoms of human disease in healthy human beings we should without doubt be confronted with the same difficulties that are encountered in making these attempts on animals.

With these considerations in mind and believing that the existing surgical studies of the ureteral meatus had been based too closely on morphology, since the delicate physiologic regulation both as regards protection from ascending infection, if indeed any such process is possible, and as regards the maintenance of normal glomerulotubular pressure had all been lost sight of, we made

efforts to consider the bearing of these points in our experimental work. We did not expect to answer these questions by any single experimental study, but we hoped to make the subject somewhat clearer and to direct attention to the importance of physiology to applied surgery. We slit the valve in dogs in the belief that the ureter was much more than a mere aqueduct for the conduction of urine and that the generally recognized check-valve action at the meatus was of contributory rather than of paramount importance. We have been led to believe as a result of these studies that, provided the physiologic and chemical balance of the organism and of the ureter were left intact, the importance of the mechanical action of the valve was correspondingly diminished and that its loss would usually be compensated for by the ureter. These ideas are not original, being simply the natural outcome of an application of modern physiology to the study of surgical problems.

Cathelin's views as to the valvular function are pointed. In a paper on the mechanism of the ureteral ejaculation, Cathelin says that the meatus does not open after the manner of a sphincter—that there is not the least suggestion of force or contraction. He regards the opening of the valve as purely passive in character, likening it to the opening and closing of the mouth of a fish.

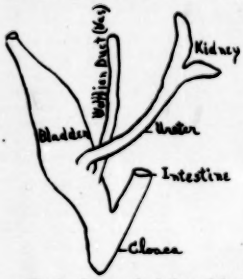

Fig. 3.—Scheme of relations of duct openings. Human embryo, 14 mm. (Huntington, Harvey lectures). The separation of these openings, which occurs in early fetal life, may account for the so-called ureteral valve.

Because of the extreme difficulty of correctly estimating the true functional condition of the kidney by its morphologic appearance after death, it is evident that the final word as to the clinical importance of the ureterovesical valves cannot be written until after a number of dogs having both infected bladders and sectioned valves have been studied over a long period or until death occurs from kidney involvement. Indeed, a control series of dogs which had been similarly infected but in which the valve had not been destroyed would also be necessary.

The present paper deals with the problem as studied through the sixth week of bladder infection only and through the fourth month in the case of uninfected bladders. It is therefore not presented for consideration as a finished statement. If the ureterovesical valve constituted the sum and substance of the "factor of safety" which must enter into the prevention of bladder reflux, the individuals in which the valve had been destroyed and in which there had existed chronic cystitis should in reasonable time show some clinical symptoms as well as morphologic changes in the tissue of the kidney. This did not prove to be the case in our experimental series.

Nevertheless, in view of the generally recognized fact that function may be very gravely impaired in organs which show but little or no change under the microscope, we do not wish to be understood as saying that at the time of death the kidneys studied were normal. It is quite certain that they showed no distinct lesion microscopically and clinically there was no evidence whatsoever of any impairment in health. It is quite possible, however, that at a later date the animals might have developed fatal kidney lesions.

CONCLUSIONS

Tentatively we conclude that in experienced hands there is little or no danger in human beings from the operation of meatotomy through the operative cystoscope either as regards immediate hemorrhage or sepsis or as regards late results from injury to the kidney.

The protection from reflux is affected at least as much by physiologic function of the ureter as by the check-valve action at the meatus. These together, rather than the ureterovesical valve alone, constitute the "factor of safety" which prevents reflux.

The ureter alone, almost without exception, sufficed experimentally to prevent reflux even if the ureterovesical valve had been destroyed. Section of the valve appeared to leave the protective ureteric function intact.

The above data would confirm the opinion expressed by others that renal infections are seldom if ever ascending but rather hematogenous in origin.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RANDALL, CUNNINGHAM, CABOT, DRAPER AND BRAASCH

DR. D. H. STEWART, New York: I confess to enough years to put my professional beginnings back in the time when we explained everything pretty nearly on anatomic and therefore on morphologic and mechanical lines. In those days we noticed that the ureter went obliquely through the bladder wall. We asked ourselves why. We took a cadaver, injected it and found that none of the fluid, even under pressure, found its way into the ureter, and we said, "Lo! this is a valve." We found infections in the kidney, and the most ready explanation was that the infections traveled up the ureter; we said that the valve was the reason that infections did not travel up the ureter. There were many other directions in which we made the same mistake. For instance, when we opened the abdomen and found an overdose of infection on the intestines, we washed them off, forgetting that the real trouble was much deeper than that, that the toxins which had traveled all through the circulation could not be washed away by Atlantic oceans of solution. Even now, I am reluctant to believe that the oblique entrance of the ureter has not some influence. It is rarely that we find a stone down there. Usually I find it higher. I do not think that is the experience of men who confine themselves to this department of practice exclusively. I recall a case described by the late Tilden Brown in which he used the ureter catheter for diagnosis and found next day that his patient had passed the stone into the bladder and ultimately from the bladder. I do not know whether that was the earliest case; it was a good many years ago, and the procedure has been gradually coming into practice.

DR. ARTHUR T. CABOT, Boston: A cause of renal hematuria which I have seen illustrated in cases very strikingly, and which I have not seen mentioned in the text-books is the movable kidney. The first case in which I noticed this was in a woman who had been having profuse hemorrhage from the bladder for weeks. She had been bleeding so much that she was as white as a tablecloth. She could not sit up except when propped up with pillows. She passed blood which was somewhat clotted and very abundant. I saw her in the country. I had no cystoscopic instruments with me, no arrangements for lighting, and I made such examination as I could, and found a movable kidney that came well down toward the brim of the pelvis. I examined the bladder thoroughly with searchers and with the finger in the vagina, but found no thickening in the bladder wall which would make one think of tumor in the bladder. I advised the physician to raise the

foot of the bed and to lower the patient's head and on the following day the hematuria entirely stopped. A good deal of organized blood-clot passed away in the first of the clear urine. The physician thought that my examination of the bladder had perhaps dislodged some tumor in the bladder. He was not inclined to agree with me in the diagnosis, and two days later he allowed the patient to get up, when the hematuria at once returned. This patient was cured by fixation of the kidney. In another case the conditions were almost similar and were cured by the same procedure. In both the right kidney was movable. The explanation is that the right kidney takes its arterial supply from the artery on the other side of the spinal column, and its renal vein is short. Therefore, when the right kidney, which is so liable to be pushed down by the liver, is displaced the tension acts first on the vein. The artery is long and adapts itself more easily to the change of position, but the short vein is pulled on and it produces a very intense congestion of the kidney. I have seen that a number of times in patients who had microscopic blood but no macroscopic blood. Dr. Cabot showed a pelvis of a kidney, rather twisted and somewhat dilated, in connection with a colon bacillus pyelitis. I have several times seen a colon bacillus pyelitis with a persistent rise of temperature running to 103 some time each day; the temperature at once dropped when the patient's feet were raised, so that the sagging of the kidney was upward instead of downward. I think that a slight obstruction at the opening of the ureter into the pelvis is sufficient to aggravate and to make persistent those inflammations, and that this change of position is often just sufficient to reestablish the proper drainage of the pelvis.

DR. JAMES W. HUNTER, Norfolk, Va.: I should like to ask Dr. Cabot if he has ever had any trouble from the deposition of metallic silver in the kidney as a result of his collargol injections.

DR. MARTIN KROTOSZYNER, San Francisco: I agree with Dr. Cabot that the diagnosis of hydronephrosis is materially aided by pyelography, and in some instances feasible only thereby. In this connection I wish briefly to report a case of advanced hydronephrosis in which the diagnosis would have been impossible without the aid of pyelography. A man, aged 41, had suffered from repeated attacks of hematuria and left-sided renal colic. At times his urine had contained albumin and numerous casts. On cystoscopic examination a normal bladder was found. Ureteral catheterization revealed both renal secretions to be of almost equally good functional value. The ordinary *x*-ray pictures were negative. In this instance the filling of the left renal pelvis with a shadow-casting fluid at once cleared up the diagnosis, which, as it were, could be read from the plate. The left kidney showed a large shadow in its lower pole, a greatly distended pelvis and widened calices. The shadows demonstrated on the plate exactly corresponded with the cavities found on the left kidney after its removal. While pyelography was instrumental in leading to an operation in this case, on the other hand, it has prevented operative interference in other cases. I think that pyelography in the hands of an experienced operator is a very important diagnostic procedure which should be employed not only by the urologist but also by the general surgeon. I should like to sound a note of warning, however, against the promiscuous use of pyelography, which does not seem to be entirely harmless to the renal parenchyma. I have seen a case in which actual damage to the renal parenchyma was caused by the fluid injected for pyelographic purposes. A man, aged 73, had been transferred from the surgical ward of the hospital to my urologic service on account of a palpable tumor on the right side which was interpreted by the surgeon as belonging to the right kidney. Since neither cystoscopy nor the functional and microscopic examination of the separated renal secretions revealed anything of diagnostic value I resorted to pyelography, which was done by means of a 20 per cent. cargentos solution. The patient died about a week after the pyelography and the autopsy showed, as the cause of death, a large carcinoma on the posterior wall of the stomach, while the mass which we had interpreted as the right kidney was in reality the widely distended ascending colon, the dilatation being due to a stricture caused by adhesions to an elongated appendix. The right kidney, which still contained some of the injected silver solution, showed parenchymatous lesions. I, therefore, do not agree with Uhle who recommends the injection of a 50 per cent. cargentos solution for pyelographic purposes and I would warn against the use of such strong solutions.

DR. GUY L. HUNNER, Baltimore: I agree with Dr. Cabot that we should not wait until the kidney holds 20 or 30 c.c. before we call it a hydronephrosis. It seems to me that any beginning dilatation of the kidney pelvis which gives symptoms is one that should be investigated and the symptoms relieved, if possible, early in the disease. I am surprised that Dr. Cabot confines his causative factors so much to the movable kidney and to the vessels of the lower pole which may cause obstruction to the ureter. In other words, he seems to confine the causative factors largely to strictures or mechanical obstructions particularly about the kidney. I find that quite a large class of these early hydronephrosis cases are due to stricture at the other two points of narrowing of the ureter, at the pelvic brim and at the portion near the bladder, cases referred to in the literature as congenital stricture of the ureter, but which in many instances, I think, are not really congenital. I think that these are especially important because they are so easily relieved. Overdilatation of these strictures will usually relieve the symptoms, and irrigation will cure the pyelitis. It is rather astonishing to see the interpretations put on some *x*-ray plates. I think that Dr. Krotoszyner's remarks concerning the effect of these different radiograph solutions on the kidney parenchyma should be taken up in a meeting of this sort and pretty thoroughly threshed out. I have seen collargol in 10 per cent. solution cause a great deal of pain to the patient. The patient would have to go to bed for a day or two afterward. Quite recently I have had two patients who have been practically confined to bed for a week afterward, with blood, leukocytes and casts in the urine, making it very evident that the kidney parenchyma had been seriously or at least markedly injured. Fortunately, after a week of rest in bed and plenty of fluids, all these kidney signs and symptoms cleared up, so I do not know how much permanent injury was done. This is merely an investigation for our own satisfaction in a great many instances, and one that is often of little value to the patient, and I do not think that we are justified in proceeding with this method if it is going to give the patient too much pain or submit him to dangers of injury to the kidney.

DR. H. D. FURNISS, New York: I have seen eight cases of so-called symptomless renal hematuria, in which stone, tuberculosis and tumor could be excluded. Two of these were bilateral. One patient died. In the other decapsulation was done, and the hematuria cleared up in two weeks. In that case there was no evidence of congestion at the time. Another patient had a normal-looking kidney. Decapsulation was done, and the hematuria cleared up in six days. The portion of the kidney removed at that time showed a glomerular nephritis. Another patient showed a red granular nephritis which cleared up in six days. Another had a capsule three times the normal thickness. The kidney was small, and the portion removed was too small to make any examination. The hematuria continued, and nephrectomy was done. In that case the hemorrhage appeared to come from the whole renal pelvis, which appeared to be ecchymotic. In another case in which decapsulation was done, the hematuria did not clear up. Nephrectomy was afterward performed, and a close microscopic examination failed to disclose the cause of the hemorrhage. In the past year I found four cases of stricture of the lower end of the ureter, with dilatation of the ureter and renal pelvis, that gave the same symptoms as stone or hydronephrosis above; in none of these cases were we able to appreciate the stricture with the use of a No. 5 catheter; it was only with the use of collargol that we were able to determine the presence of stricture. In one case in which there was a stricture of the right ureter, a ureterovesical anastomosis was done. The patient developed a suppurative pyelitis, and I took the kidney out. Three months after that she began to have the same symptoms on the other side, and in that case overdilatation has not done any permanent good. Just before she has an

attack of intermittent hydronephrosis the urine will drop down to 6 ounces, and when this is relieved by dilatation it will go up to 25 or 26 ounces. I expect to attempt an anastomosis on the other side. I have had a good deal of trouble with pain after the use of collargol. Hereafter I do not intend to inject collargol except in the hospital, because at times I have had almost a collapse, in some cases rise of temperature for a day or two, and recently I had a case in which a great amount of pain was caused and a rise of temperature for three or four days; but the point that struck me was that on the second day after the injection a big red blotch appeared over the kidney region which looked very much like erysipelas. Recently there have been some reports in the literature on the relation of skin lesions to visceral lesions, and I mention this as possibly being an instance of that kind. In a number of cases of hydronephrosis our trouble is at the vesical rather than at the upper end.

DR. FRANCIS R. HAGNER, Washington, D. C.: I have noted regurgitation of fluid from the bladder to the kidney during ureteral catheterization. It was demonstrated by injecting the bladder with argyrol and having it escape from the ureteral catheter. In one case which came to operation I endeavored to fill the bladder with fluid and to force the fluid out through the ureter. I was unsuccessful in this attempt. I believe, however, that where the ureteral orifice is thickened it does occur.

I have already reported three cases of hemorrhage from the kidney in which the hemorrhage stopped immediately following ureteral catheterization. In one case the hemorrhage had lasted one year, in another six months, and in a third for thirty-five years. The case of one year's duration, four days later developed a thrombosis of the veins of the testicle on the right side. The patient recovered from this. There have been no recurrences. The patient who had bled for thirty-five years I saw a year ago. It has been eight years since I catheterized the ureters. When he came to me he looked like a man with malignant disease. His urine would vary from a dark brown to almost as black as sarsaparilla. There was no lesion in the bladder and nothing but blood in the urine. The next day the urine was clear and it has remained clear ever since. Microscopic blood remained for about a week. I cannot explain that, unless it is possible that there was a papillary growth in the ureter which was dislodged by the ureteral catheter.

DR. EDWIN BEER, New York: In the last issue of the *American Journal of the Medical Sciences* I published a report of sixty experiments on dogs, in many of which I made a ureterovesical anastomosis. The experience in dogs, if they are watched long enough, would argue against the conclusions which Dr. Draper reached. Infection invariably ascends the ureter. The only way to test that in human beings would be to study patients on whom a ureterovesical anastomosis had been done. Although the evidence in unilateral hematuria is rather strong, I do not think that it is conclusive that the hemorrhage is renal in origin. To exise a piece of the kidney and get a microscopic report of nephritis in such a case is to my mind almost ridiculous as an explanation of the etiology of the hemorrhage, because in a series of one hundred cases which I had the opportunity to study when I was abroad ten years ago, it was found that after the age of 26 almost all kidneys show nephritic signs, and after the age of 33 practically 100 per cent. show nephritic changes. To get a report of nephritis from the exploration of a bleeding kidney is not sufficient. The whole ureter tract is from 25 to 37 cm. long, and it might contribute to the bleeding. To turn to the kidney right away for an explanation of the trouble, I think, is fallacious. The case should have been studied quite differently. Specimens should have been taken at different levels of the ureter to prove that it is not the source of the bleeding. I have in two such cases detected bleeding from the ureter by obtaining clear urine higher up and bloody urine lower down. I have had two cases similar to Dr. Hagner's. To explain these hemorrhages by varices, I think, is going a little too far, because when one does a section of the kidney it is practically impossible to see multiple dilated vessels, unless they are engorged with blood. Anyone who has done autopsy work on the esophagus in cirrhosis cases knows that it is almost impossible to recognize the dilated vessels.

DR. JOHN CUNNINGHAM, JR., Boston: That pyelography is a valuable procedure and is becoming more generally recognized as such is unquestionable. I think that all of us who have used it a great deal realize that it is accompanied sometimes by severe pain. Having had several unpleasant experiences of that sort, I thought that the pain might depend somewhat on inflammations in the kidney at the time the injection was made. In instances in which inflammatory products are found in the urine from the kidney to be injected, I have since used argyrol in a 40 per cent. solution instead of collargol. Since that time I have not had any bad results following the procedure. Another point in connection with pyelography that opens up a very large field and that so far has not been mentioned is that of stones in the kidney associated with hydronephrosis. I think that most surgeons who find shadows of stones in a plate proceed to remove the stones without further knowledge of the kidney. There is no idea, when that procedure is carried out, as to the condition of the kidney cavity. There may be a residual urine in the kidney which is possibly the cause of the stone, or the stone may cause the dilatation of the kidney pelvis by being impacted in its outlet. It has been my custom, after demonstrating the presence of a stone in the kidney, to inject it again and it has been the rule rather than otherwise that the kidney pelvis has been found abnormal. This has a practical bearing, because if the stone is due to residual urine in the kidney it should be known and some procedure to drain the bottom of the kidney pelvis should be carried out at the time of operation. In some instances the radiograph has been of value in the operation itself. In one case two stones, each the size of a Concord grape, were detected in the pelvis. The pelvis was found to contain about 50 c.c. The plate of the injected kidney showed the upper calix much distended. At operation it was simply necessary to cut through the cortex into the calix and remove the stone through a three-quarter inch incision.

DR. EDGAR G. BALLENGER, Atlanta, Ga.: I would like to report the case of a patient with unilateral hematuria of sixteen years' standing. The patient's health had been very much run down and the bleeding came on quite profusely, but intermittently. The ureters were catheterized on two occasions, and each time bloody urine came from the right side and clear from the left. *X*-ray pictures were taken after collargol injections, but no pathologic lesion could be found. It was definitely determined, however, that the left kidney was all right. An operation was decided on, and at the time of the operation nothing could be found wrong with the kidney. It was incised, carefully examined, but no evidence of nephritis or any trouble could be found. Since the bleeding came profusely and had been so serious in character, however, nephrectomy was done. The patient made an uneventful recovery and the hemorrhage ceased. The pathologist's report showed that there was practically nothing wrong with the kidney except two or three varices, which were so small that he could hardly call them varices, but at two or three points the bloodvessels seemed slightly dilated, probably a mass about the size of a pea, and yet from that point the patient had been bleeding for sixteen years.

DR. A. J. CROWELL, Charlotte, N. C.: One of my five cases of inexplicable unilateral hematuria occurred in a woman with three successive pregnancies. Following the delivery, the hematuria disappeared. Following the third pregnancy the hematuria did not cease. I could find no cause for the hematuria whatever—no indications of nephritis, stone, hydronephrosis and no bacteria. The hemorrhage was so profuse that it was decided to cut down on the kidney and find the cause. No evidence of a diseased condition of the kidney could be found. Then the kidney was decapsulated and the hemorrhage immediately stopped. That was three years ago, and the patient has had no recurrence since.

DR. ALEXANDER RANDALL, Philadelphia: I was glad to hear Dr. Beer say that minor lesions are found in practically every individual over a certain age. I do not think it is fair to blame these minor lesions for profuse hematuria. They are

nearly always present, and Israel has pointed out that it is the point of least resistance that gives way; if, in a kidney with a few minor lesions, a periodic congestion is added, a hematuria results, and the actual cause of the bleeding is not the nephritis, but the nephritic lesion plus congestion. When we attack a case like that, the thing to cure is not the nephritis but the congestion, and that is why I wanted to quote Brödel's words, which showed that opening the kidney along Brödel's line will cut across and completely occlude six of those large connecting veins. Dr. Arthur Cabot's remarks as to movable kidney come in the same category. Not all movable kidneys bleed. I think there is something plus the mobility which causes the hemorrhage. Obstruction to the vein or obstruction to the ureter would cause congestion, which in turn would be followed by a hematuria, as has been repeatedly proved experimentally. There the thing to be cured is the mobility of the kidney. So that there are quite a group of conditions that are entirely extrinsic to the kidney which are probably the ultimate pathologic condition, but the condition of moment is in the kidney in the form of a congestion, and that is what should be removed by operation. The case of pregnancy that was mentioned is along exactly the same line as the cases I cited in my paper. Those I think are due to pressure on the ureter or on the vessels. Albarran reported seven cases which he attributed to pressure on the vessels or the ureter, causing congestion of the organ and hematuria. Of course, in those cases we cannot completely exclude the action of toxic matter on the kidney, and probably a majority of the cases would be due to it, but there are some entirely due to pressure, the pressure causing a congestion and the congestion a hematuria.

DR. HUGH CABOT, Boston: We were many of us, I think, brought up to believe that the ascending infections were the most common. Gradually that view was abandoned, first in regard to tuberculosis infection and subsequently in regard to the others. That ascending infection does not occur I am not prepared to say, but that it is rare, that most of the kidney infections originate in the kidney, I believe. The valve action on which Dr. Draper has been working seems important, not in protecting against infection of the kidney, but in protecting against dilatation of the ureter, against a reflux. I do not think that it is the whole protection, because in cases in which the ureter has been cross-cut and implanted higher up dilatation of the ureter does not always occur. I have, for instance, one case in which I implanted the ureter higher up eight years ago for cancer. The patient is still alive and the ureter is not dilated except in its lower 2 inches, which is the part of the ureter I worked on. We have all seen stones in the intravesical portion of the ureter. On the other hand, I think that that is not the most common point at which they lodge. They come down to where the oblique, bladder-wall portion of the ureter begins, and then if they do not promptly pass they are likely to form for themselves a pouch which lies below the oblique portion of the ureter, and that, I think, will not be reached by ureteral meatotomy. An incision on the upper side will go by it; I have two cases in which I approached the ureter from the outer side and the stone lay so far below the intravesical end of the ureter that I think it could not have been reached from within. Some of these stones lie for long periods in the lower end of the ureter without attracting the patient's attention sufficiently to send him to the doctor.

Someone asked whether I had seen the deposition of metallic silver in the kidneys as a result of collargol injections in pyelography. In one of our very early cases of large hydronephrosis in which we had not made a diagnosis at the time the injection was made, an acute obstruction and an acute infection of the kidney occurred immediately following the injection, and at operation five days later a part of our silver was found in the sacculated portion of the kidney. That is the type of case in which caution should be used, and it is not the type in which pyelography is particularly important or valuable. It is not in the detection of these large hydronephroses that pyelography is necessary; it is in the detection of the early cases and in the exclusion of hydronephrosis as a cause of symptoms that it is particularly valuable.

DR. JOHN W. DRAPER, New York: In animals hematuria can be experimentally produced by raising the pressure in the renal pelvis the very slightest extent. Pressure in animals is always negative. The moment that it changes from negative to positive, bleeding results. It is quite conceivable that this may be the explanation of certain hematurias in man. It just occurred to me at the time Dr. Beer was speaking that the injury to the ureter which must take place during those transplantations is important because we cannot expect its physiologic function to continue unimpaired after even very slight traumatism has been done to it.

THREE CASES OF FAMILY DYSTROPHY OF THE HAIR AND NAILS

J. S. EISENSTAEDT, M.D.
CHICAGO

Family dystrophy of the hair and nails is a hereditary condition previously noted, to the statistics of which I wish to add these cases. Two reports of the unusual condition have been published; one in France by Nicolle and Hallipré;[1] the other in this country by Charles J. White.[2] Since that time the literature contains no further report. The three cases which I have observed are in many respects identical with the two previous cases cited, though occurring in patients enjoying somewhat better social and hygienic surroundings.

My cases are in three brothers, the third, fifth and ninth children in a family of nine, eight of whom are living and in good health. One child, a girl, who was not affected, died in infancy. The following is a list of the living:

Lee, aged 18; not affected.
Sidney, aged 15; not affected.
Carl, aged 14; affected.
Edna, aged 11; not affected.
Urban, aged 9; affected.
Arthur, aged 5; not affected.
Ina, aged 3; not affected.
Clyde, aged 1; affected.

It will be noted that between the births of the affected children, all boys, there were born healthy and normal children.

The father, aged 47, of German parentage, does not show any peculiarities of the hair and nails, nor, as far as can be determined, did any of his ancestors. The history of the mother and of her family, however, is of interest. The mother died shortly after the birth of the baby, Clyde, following abdominal section for "malignant tumor of the abdomen." She was affected with this peculiar familial anomaly, and, strangely enough, was of French-Canadian extraction, as was White's patient. This to me is of striking interest, inasmuch as the original report concerns a family living for generations in France, whence the progenitors of White's patient, as well as those of my patients, emigrated. The genealogic chart in the cases to be described is not so complete as the one published in connection with the cases in France; family records are rarely as complete in America as on the Continent. It shows, however, an unbroken line for five generations, and members in each generation have been affected with anomalies of the hair and nails. Only members positively known to be affected are cited.

1. Nicolle and Hallipré: Ann. de dermat. et de syph., 1895, vi, 804.
2. White, Charles J.: Jour. Cutan. Dis., 1896, p. 220.

GENEOLOGIC CHART FOR FIVE GENERATIONS

Mme. S.	Great-great-grandmother
Mme. A. C.	Great-grandmother.
M. Cad'.	Grandfather of my patients living at the age of 90 in Canada.
M. Cad'. Jr. / Mrs. G.	Mother of my patients.
Carl, Urban, Clyde.	The patients.

It will be noted that members of each generation are affected and that the condition is transmissible through both the male and female members; also that mother, as well as father, may transmit to sons and daughters alike. There are probably other members of the collateral branches of the family affected, but no definite knowledge of them is at hand.

I shall report minutely conditions noted in the eldest patient, which serve in every respect with regard to the hair and nails as an accurate description of the condition obtaining in the two younger boys.

Carl G., aged 14, height 4 feet 7½ inches, normal build, weight 96 pounds. His intelligence is at least normal for his age. He is of a friendly disposition and very straightforward and honest.

The head is of average size and normal contour, except for slight asymmetry, the right side being the larger. The scalp is negative, showing no seborrhea or parasites. There is, however, a curved linear scar from an old trauma over the left parietal bone. The hair-line begins 5.5 cm. from the bridge of the nose. The scalp is covered with a moderate growth of pale, downy hairs, none of which is over 2 or 2½ inches in length, in spite of the fact that the patient has not had his hair cut for many months. The hair grows very slowly. The ends are pointed and none is split or broken off. They are very easily removed and do not break on traction. There seems to be some anomaly in their implantation. Here and there at wide intervals are seen normally implanted coarser brown hairs. Microscopic examinations of the hairs were made and I found nothing abnormal; they appeared as normal fine blonde hairs. There were no parasites, no nodes, no rings, no air-bubbles and no splitting of the extremities. No bacteriologic examination was undertaken, as there was no evidence of even the slightest suspicion of bacterial or fungus invasion.

Fig. 1.—Carl G., showing dystrophy of hair and nails.

Fig. 2.—Urban G., younger brother, similarly affected.

The eyebrows are very poorly developed. There are no coarse hairs and but a small number of lanugo hairs. The eyelashes are extremely sparse and pale. The pupils react to light and accommodation. Examination of the eye-ground by Dr. H. S. Gradle showed nothing abnormal. There is a plaque of erythematous lupus on the nose and two symmetrical patches behind the ears. These lesions have made their appearance within the last year. On the right cheek is a nevus flammeus of large size.

The buccal cavity is normal, palatal arch, tonsils and teeth showing no peculiarities. The neck is normal in contour and what is apparently a thyroid body can be made out.

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The trunk and extremities are negative. There is no trace of axillary or pubic hair. The genitalia show no peculiarities and no increase of adipose tissue in this region. In the axillary region and on the anterior surfaces of the knees are sites of a papillary hypertrophy of moderate degree.

The hands are normal in contour save for the distal phalanges, which are noticeably increased in volume. The skin on the distal phalanges observed shows a moderate increase in thickness. The nails on the hands are all affected to about the same degree and show an enormous hypertrophy of the nail-bed (Figs. 1 and 2). The nails are kept short, because, if allowed to grow beyond a certain length, they become brittle and crack at the very slightest trauma. There is no marked accentuation of the striae, either vertical or horizontal, though a slight increase can be ascertained. Likewise there are no ulcerations about the base of the nail and no odor emanates from them. The nails of all toes of both feet are affected in a similar manner but to a less degree. The feet are in other respects normal.

There is absolutely no sign of hereditary syphilis in any of the children.

The features of these cases especially to be noted are the following:

The condition cannot be defined as a hypertrophy or atrophy of the hair and nails, but merely as a trophic anomaly occurring repeatedly for generations in a decadent family. Its occurrence in five consecutive generations, in which members of each are definitely known to have been affected. Its transmission through both male and female members to both sons and daughters (though these three patients are all males).

The previously published reports lay stress on the mental deficiency of affected patients; such deficiency cannot at this date be determined in these children. Nicolle and Hallipré record the absence of the thyroid gland in their patient; this is at least clinically not borne out in my eldest patient, Carl, though in the second patient, Urban, the presence of the thyroid body can not be determined.

The paronychiae emphasized in the other reports are absent in the cases under observation, probably because greater attention has been given these children and because they have not been subject to repeated traumas to the hands incidental to manual labor. My cases show no features not previously observed, but closely bear out the findings heretofore reported.

One might formulate interesting hypotheses in an attempt to explain etiologically and associate this peculiar condition with other dermatoses, which, of course, cannot at this moment be confirmed. The possible relationship between family dystrophy of the hair and nails and acanthosis nigricans occurred to me, inasmuch as the latter condition is characterized by dystrophic changes in the dermal appendages; furthermore, Carl G. shows the peculiar papillary hypertrophy, which is not at all unlike that noticed in acanthosis nigricans. Another suggestive fact is that the mother, also affected, died of some malignant abdominal growth — a marked and essential feature of acanthosis nigricans. The etiologic and pathogenic factors operating in this condition are like those in so many dermatoses, wholly or nearly in the dark, and I believe only with a broader understanding of general metabolism and especially the internal secretions of thyroid, pituitary, testicle and ovary will the obscurity be lifted.

32 North State Street.

The Radical Cure of Hernia.—A surgeon should take more pleasure in one patient cured by operation than in ninety-and-nine of those who keep their ruptures up by means of trusses. —H. T. Butlin in *Clin. Jour.*

A SIMPLE METHOD OF INTRODUCING THE PURSE-STRING SUTURE FOR COVERING THE STUMP OF THE APPENDIX

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Notwithstanding the many objections raised to and the number of devices suggested as a substitute for the old purse-string suture for burying the stump of the appendix, nevertheless, for the ordinary case, it still remains the suture of choice in the technic of the great majority of surgeons in this country.

The following plan is not suggested as a substitute, but as a simple method of introducing a suture to bury the stump of the appendix. It has to recommend it the fact that an assistant is unnecessary to depress the stump, and the fact that with just a little care there is slight danger of breaking the suture while tying. The stump of the appendix is treated according to the method of choice of the individual surgeon; perhaps ligature, phenol (carbolic acid) and alcohol is the best.

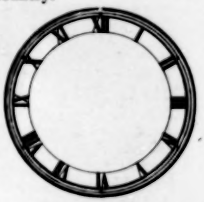

Fig. 1.—Diagram showing relative position of stitches for purse-string suture.

Fig. 2.—Stitches placed for purse-string suture to bury the stump of the appendix.

The suture is begun at the mesenteric side of the appendix, a bite being taken to include the vessel near the base and continuing away from the mesentery, far enough from the base of the appendix to insure a pocket in the cecum sufficiently large to hold the stump. Bites are taken in the wall of the cecum at points which may be illustrated by using, for instance, the numerals on the face of a watch as a guide for introducing the suture, taking 12 o'clock as the mesenteric side and introducing the needle, pointing it away from the mesentery at 12 o'clock, 10, 2, 8, 4 and 6 o'clock. The free ends of the suture are drawn on and the stump of the appendix automatically disappears, without the aid of a depressing instrument. The free ends of the suture are next tied, and the purse-string is complete with a sufficient number of approximating points to insure good coaptation.

In favor of this plan are the following points:

1. It is simple.
2. It is rapid of introduction.

3. The stump invaginates without assistance and thus obviates the frequent annoyance of the forceps or probe, with which the stump is usually inverted, becoming caught in the purse-string when tied.

4. Here there is a prompt invagination of the stump of the appendix accomplished by a straight pull, instead of one impeded by the kink of the knot.

5. There is lessened danger of contaminating the peritoneum of the bowel, as there is here no danger from the instrument, which may have picked up germs from the stump, slipping and inoculating surrounding tissues.

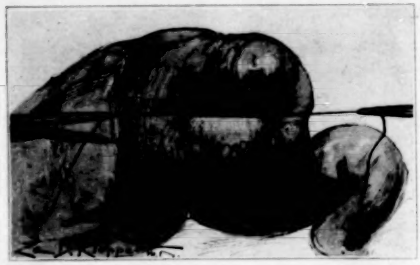

Fig. 3.—Invagination of stump of appendix.

6. There is less handling of the bowel, as the free end of the suture, when held, acts as a means of steadying the cecum.

32 North State Street.

SARCOMA OF LEFT FRONTAL LOBE OF BRAIN

WITHOUT DEFINITE SYMPTOMS UNTIL SHORTLY BEFORE DEATH *

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The patient was a white woman, aged 65, single; she was a well-educated woman of high intellectual and social attainments, alert, and keenly alive to her environment, interested in family and church affairs, a careful and temperate person in her diet and other habits. The family history is excellent, its members generally living to advanced age, and dying of some form of vascular degeneration.

HISTORY

Previous health was good except for occasional attacks of "indigestion." The patient's friends recall three or four attacks of this kind in the preceding two years. They were not sufficiently frequent or prolonged to suggest anything else than the result of indiscretion in diet. They came on usually in the night, and were associated with abdominal pain, nausea and vomiting. Recovery was prompt, and there were no after-effects, the patient feeling well, as at other times.

Regarding the period immediately preceding her illness, the following data have been obtained. Many of these points were not discovered until after death, and were not therefore available in arriving at the diagnosis:

In the autumn of 1910 an acquaintance who met and talked with her on a street-car noticed that she would sometimes stop in the midst of a sentence without completing it. He remarked at the time that it was unlike her natural self. An intimate friend noted that she seemed somewhat nervous during the winter of 1910-1911; that she lost some of the usual freshness of her complexion and, apparently, some weight. Her laundress reported that for some time (months?) before her illness developed, she had had much nose-bleed, sending to the laundry from seventeen to twenty bloody handkerchiefs a week. The patient evidently concealed this fact, as it was not learned till after her death.

During April, 1911, there was a gathering in the church of which the patient was a member, lasting several days. She spent herself freely in the preparations, entertaining, services and social functions connected with this affair, and was fatigued by it. May 6 she had a digestive attack similar to those already described. From May 11 to May 22 she visited a brother in a near-by city. The brother noted nothing abnormal except that she stated that she was tired, and that her visit had refreshed her. Returning, she talked at length with a friend who was making the same journey, and appeared to have all her faculties in their full perfection. She frequently said that she did not seem to digest well. During the last few weeks of her active life it was noted by a friend that she showed great "nervousness" at the meetings of a church organization of which she was president, and seemed troubled by this. A week before her illness was noticed, members of her Sunday school class noted that she recorded the amount of the collection incorrectly. When her attention was called to the error, she smiled, and wrote again an incorrect figure.

Shortly after her return from the visit to her brother (about May 24) she wrote him that she had declined an invitation to the wedding of a near relative, without assigning any reason for doing so. This was so contrary to her usual attitude in such matters, that her brother's concern was aroused. He felt sure that she must be ailing, and advised her to consult a physician. On May 27 the friend above referred to noticed that the patient was unnatural and unresponsive, seeming "hazy," and taking no interest in any person or thing. She directed another friend's attention to this, who confirmed the observation. Next morning the patient stayed in bed, though she did not complain of being indisposed. She did not wish to go to church or to be read to. Her indifference to both was in her most unusual.

I first saw the patient May 31, 1911. She was dressed and sitting down-stairs. I found a tall, well-nourished, well-formed woman; skin rather pale; expression apathetic; pulse normal, and radial arteries not appreciably thickened; tension not raised. Her answers to my questions were delayed and incomplete, and frequently qualified by "I can't remember" or "I think." She was unable to answer questions as to the simplest facts of her daily life, as what she had for breakfast, when her bowels moved, and how often she passed urine. She said after being urged, that she had declined the wedding invitation because she did not feel sufficiently interested in it to make it worth the effort to go, but acknowledged that it was unusual in her not to be interested in such matters. Her statements were obtained with difficulty, piecemeal, and by many questions and some guiding on my part as to answers.

June 1: The patient was in bed in the same mental state as on the day before. Examination of chest and abdomen was negative. The left pupil was smaller (slightly) than right, both reacting normally to light and accommodation. The urine was alkaline (kept over night, weather hot); albumin and sugar absent; indican, a slight excess over normal; a very few small hyaline casts. Blood examination showed hemoglobin, 90 per cent.; leukocytes, 9,200; red cells, 5,675,000; histology of cells normal. Blood-pressure was 150 mm.

The patient was seen in consultation with Drs. B. R. Logie and T. A. Williams on June 3 and 6, respectively. At these examinations and my own daily observations the following data were obtained:

No deviation was discovered in the muscular apparatus, or in general or special sense. Station and gait were normal; coordination of movements perfect; reflexes everywhere normal. Color sense was intact; field of vision normal in both eyes; ophthalmologic examination revealed no choked disk or other abnormality of retinal fields.

* Case and specimen presented before the Medical Society of the District of Columbia, Feb. 28, 1912.

A sentence spoken to her in French was understood, and a brief but pertinent answer made in the same language. She stated correctly the names of flowers and their colors when shown to her. She gave correctly the names of members of her family; also of her nurse, who had been with her two days, but was unable to give that of her physician (myself) whom she had seen less than half a dozen times. She could not give the street or number of the house in which she lived. She stated correctly the name and function of a pen and of a piece of money. When shown a napkin-ring, she called it a "ring," and said it was used "to eat with." When questioned, her expression denoted great confusion. She would look from one person to another, as if seeking assistance, and wrinkle her forehead as if making an effort to express herself. All her answers were given slowly after more or less delay, necessitating frequent repetition of questions.

On request she wrote her name perfectly. A sentence of six words was given, and she was asked to repeat it, which she did slowly, but accurately. Asked to write the same sentence, she did so perfectly except the last word, which was not completed. She kept on writing, repeating the words of the sentence irregularly and without sense, misspelling words, leaving them unfinished, making a jargon. Her penmanship at the same time progressively lost its character, becoming like the scrawl of an untaught child. She stopped writing only when she had filled the page. She was then asked to write a sentence of eight words without first repeating it. She wrote no part of this correctly, repeating two or three words of the sentence, leaving them incomplete, and using the same immature style of penmanship. After writing thus three or four lines, she stopped. It is a matter of regret that the specimens of writing were lost, being thrown out by a hospital clerk when the record was filed.

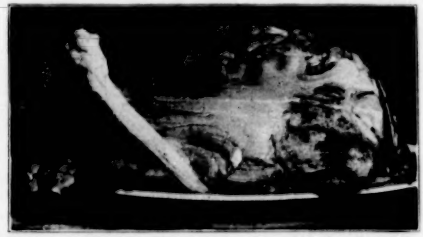

Fig. 1.—Sagittal section of left cerebrum 2 cm. from the longitudinal fissure (from a photograph). The tumor is situated in the frontal lobe on the right-hand side, overlapping the edge of the plate.

The patient was with difficulty persuaded to read a passage, but after beginning, read fluently, and in the main accurately. It was noted that she miscalled the word "Australian" for "Austrian"; for "lawyer" she substituted "solicitor."

On the above findings—blocking of mentality and power of expression, partial disorientation, loss of memory for words, apathy and pupillary disturbances—we made a diagnosis of organic lesion of the left frontal lobe, involving Broca's convolution. We were unable to determine whether the lesion was a tumor, a thrombosis or a hemorrhage. We definitely expressed the opinion that it was probably not a tumor, because we at that time had a negative history of any symptoms pointing to a progressive development of the disease.

The above conditions continued with little change until the evening of June 8, when at 8:30 I was summoned by the nurse with the statement that the patient had suddenly passed into a stupor. On arriving, I was told that she had clenched her left hand, violently rubbed the left side of the face and head, and then passed suddenly into a stuporous condition; that the tension of the pulse had decidedly increased at the same time.

I found the patient very pale; the jaw dropped, and the tongue drawn back; breathing slow and stertorous; pulse slow and strong, with tension somewhat increased. The nurse stated that the tension had been still higher at the onset of the attack. The pupils were contracted and did not respond to light. The eyes were closed, and efforts to separate the lids encountered marked resistance. This condition was much more pronounced on the left side than on the right. There was profound stupor. The right arm and leg seemed perfectly flaccid. This was not true of the left side. There was no response to sharp cutaneous stimulation on the right side. Patellar reflex weakly present on both sides. Slight Babinski reflex on left side, with sharp retraction of the leg on stroking the sole of the foot. The abdominal reflexes were everywhere absent. I observed the patient three hours. During this time she frequently rubbed the left side of the face with the left hand, as if wiping something away. She moved the left arm and leg frequently in a restless fashion, but not the right. Later, movement was induced in the right arm by placing it in an uncomfortable position, but there was no spontaneous movement of the right side. Breathing was puffing in character. Gradually the natural color of the skin returned, and the breathing became less stertorous, assuming a snoring type. Twice the patient roused slightly for a moment, and gave a look of recognition and a slight smile, but immediately relapsed into a stuporous state. The abdomen was quite distended, and the breath very offensive. I gave 2 minims of croton oil with a small stool resulting. This was repeated two hours later, without result. There was involuntary urination, and the patient vomited once.

June 9, 10 a. m.: The stuporous condition was still present, but less pronounced. Spontaneous movements were present in all limbs. When the patient's right hand was taken hold of, there was a slight convulsive movement of the fingers: it seemed to involve chiefly the middle and index fingers. This was kept up at intervals of a second or two as long as the hand was held. There was some rubbing together of the fingers and thumbs of both hands, and picking at the bedclothes and nightgown.

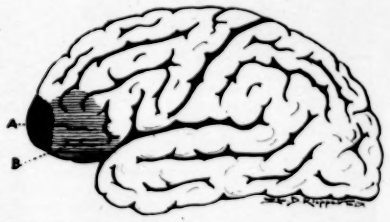

Fig. 2.—A, smaller tumor, denser than the subcortical one, but the same histologically, adherent to the parietal dura opposite the left eyebrow; B, area of softening.

10 p. m.: The general condition was unchanged. The Babinski reflex was carefully tested and found present on both sides, slightly more pronounced on the left. Slow hyperextension of both great toes was elicited by stroking the plantar surfaces, by firm stroking along the inner margins of the lower third of the tibiae, and, on the left side, by sudden grasping of the posterior tibial muscles (as suggested to me by Dr. Williams). Abdominal reflexes were absent. Pupils were not contracted, and reacted to light. The patient resisted efforts to separate the lids.

June 10: The Babinski reflex was present on the left side but not on the right. The sensitiveness to tickling the soles was much less than before. Abdominal reflexes were absent.

June 11: The Babinski reflex was absent on both sides, normal flexion being the result of stroking the plantar surfaces. Practically no retraction of the limbs followed tickling the soles. Abdominal reflexes were absent.

June 12: Same as preceding. On this day the patient was removed to the Garfield Hospital. Stuporous condition progressively increased, and patient died June 13, apparently of medullary paralysis.

AUTOPSY

Section of the skull only was permitted. Veins of the scalp were engorged, exuding on section dark blood. Congestion of dural sinuses. Nothing else noted *in situ*, except that the anterior portion of the longitudinal fissure was curved to the right. On removing the brain, the tip of the left frontal lobe was found adherent to the dura above the left orbit. The fore part of the right cerebral hemisphere was pushed aside, and encroached on by the corresponding portion of the left. There was diffuse atheroma of the arteries of the base, and thickening of the meningeal vessels.

On section of the brain an ovoid tumor was found in the left frontal lobe the size of a small hen's egg. It encroached on the lower and inner aspects of the surface of the hemisphere, approaching to within a few millimeters of the cortex in these situations, and producing a distinct depression on the surface of the opposite hemisphere. It was situated in the white matter, and was of a brownish-gray appearance. The margins were not clearly defined. On the tip of the left frontal lobe was a similar growth, adherent to the parietal dura and of a somewhat denser consistency, the size of a small chestnut. The white matter between the larger tumor and the temporal cortex was the seat of scattered minute areas of venous stasis or hemorrhage. The entire third frontal convolution from the smaller tumor backward to the sylvian fissure was the seat of an acute softening.

Microscopic sections were made from (*a*) the larger tumor; (*b*) the smaller tumor; (*c*) the white area between the larger tumor and the temporal cortex, and (*d*) the softened area of the third frontal convolution. Examination showed that *a* and *b* were similar, being round-celled sarcomas, rather rich in blood-vessels; *c* showed malignant infiltration, the tumor appearing to arise by proliferation of the adventitial cells of the blood-vessels; both *c* and *d* showed hemorrhage and thrombosis, both fresh and old (that is, in process of organization).

Careful examination failed to reveal any other abnormalities than those described above.

The points of especial interest are:

1. Should the diagnosis have been more definitely made before death? The case points out that rapidity of development of a clinical picture pointing to destructive brain lesion is not of itself an argument against the presence of tumor, as the growth may be without symptoms for a long time, and become suddenly active through rapid infiltration, metastasis, or the production of collateral brain disturbance.

2. Provided that the diagnosis of tumor had been made with the data available at the time, what should have been the attitude as to advising operation in this case? Pressure symptoms were not present, so that that justification for opening the skull was absent. The only indication was furnished by the chance of removing the tumor. In this case we know by subsequent developments that operation would have been futile, and would have resulted in death. But we do not have the data obtained by autopsy in determining the question of operation. The tendency of the advice generally received by general clinicians from both neurologists and surgeons is to operate in brain tumor unless there are positive contra-indications. Disregarding the personal factor of criticism for advising and undertaking ill-advised operations, the latter are, in the eyes of the layman, a reflection on both diagnosis and surgery, and operate by their influence to keep suitable cases from receiving the advantages of surgical relief.

3. What was the pathophysiology of the transient hemiplegia associated with the onset of June 8? I attributed it at the time to an ischemia of that side of the brain, established by Nature to control the extravasation of blood, occasioned, as I believed, by the occurrence of fresh hemorrhage. Cushing has pointed out that the high blood-pressure associated with intracranial hemorrhage is probably a protective mechanism, but whether this would be the effect of an acute softening, I am unable to say. We have nothing else than the occurrence of the softening with which to associate it, but it is entirely possible that there were other and unknown factors concerned in the production of the clinical picture.

4. The unusual symptom of epistaxis occurred too frequently and was too prolonged to be a mere coincidence. What connection, if any, did the nose-bleed have with the tumor?

5. What was the cause of death? There was no heart or lung or kidney affection, primary or secondary. Death apparently ensued from medullary paralysis. There was no apparent lesion in the medulla or its environment, though carefully searched for. I am unable to explain this.

I am indebted to the late Dr. John Neate of the Army Medical School for the preparation of the slides, and to Dr. H. H. Hazen of Washington, D. C., for the photograph from which Figure 1 is made.

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THE ELIMINATION OF THE MIDWIFE*

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It is most gratifying to note the interest which has been awakened in the midwife problem during the past few years. The outlook is hopeful and an attempted early solution of the question may be anticipated. The danger lies in too great haste. Either we are going to settle the matter to our credit and future welfare, or we are going to make a serious and perhaps irreparable mistake. My own feeling is that the great danger lies in the possibility of attempting to educate the midwife and in licensing her to practice midwifery, giving her thereby a legal status which later cannot perhaps be altered. If she once becomes a fixed element in our social and economic system, as she now is in the British Isles and on the Continent, we may never be able to get rid of her. I agree with Dr. E. P. Davis, that she is a "menace to the health of the community, an unnecessary evil and a nuisance," and I am, therefore, unalterably and uncompromisingly opposed to any plan which seeks to give her a permanent place in the practice of medicine. In no other branch of medicine do we permit ignorant, non-medical individuals to give counsel and assistance in medical matters. Midwifery is the most poorly done of all medical work, not alone because about 50 per cent. of all labors are in the hands of midwives, but largely because of the low standards of midwifery existent among physicians and laity alike. And these standards cannot be raised so long as 50 per cent. of the cases are in the hands of individuals with as poor preliminary education and as little medical training as have the midwives. The argument that large numbers of physicians do as poor obstetrics as the midwives is entirely beside the question. We are quite ready to admit this, but to claim that for this reason we must retain the midwife, if we retain the physician, is absurd. Legally the midwife has as yet practically no status and, even if she had, there can be no reason why she should

* Read before the American Association for Study and Prevention of Infant Mortality at the Annual Meeting in Cleveland, October, 1912.

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not be subject to the same laws and requirements as those governing all other individuals practicing medicine. The fact is, as I shall attempt to point out, that we can get along very nicely without the midwife, whereas all are agreed that the physician is indispensable. It thus seems that the sensible thing to do is to train the physician until he is capable of doing good obstetrics, and then make it financially possible for him to do it, by eliminating the midwife and giving him such other support as may be necessary.

I am opposed to educating and licensing midwives to practice obstetrics in this country for several reasons; first, because I believe it unnecessary, since I am convinced that a plan can be evolved and practically applied which will give to every child-bearing woman in the country competent medical attendants; and second, because I do not believe it possible to train women of the type of even the best of midwives to practice obstetrics satisfactorily.

In this country, with its great wealth and unlimited resources, it should be, and is, unnecessary that a system should exist and be supported which seeks to give to those unable to pay for competent service a service which is incompetent and unsafe and administered by untutored, non-medical individuals. We are passing through a political, social and economic revolution which is certain to result in giving to the worthy poor justice in the necessities of life, among which must be included competent medical service administered by those who are trained in medicine. They will demand it and they are going to get it. This does not necessarily mean socialism, but it does mean social justice. Talcott Williams in speaking on "Equality of Opportunity" in this country presents some astonishing facts and figures which show that the trend of modern times is toward "equality of opportunity in all that relates to economic progress." This fact, as he points out, is apparent in the marvelous growth in savings-bank deposits, industrial and regular life-insurance and in the increased ownership of houses and lands by the common people, showing that the average citizen is coming nearer and nearer to the place where he is able to secure for himself the things of life which he needs. If equality of opportunity as regards medical service is ever to come in this country, it cannot come so long as we train one class of practitioners to care for those who can pay, and another much inferior class to care for those who cannot. If this be true, then in the name of humanity and of justice let us not give to the midwife a permanent place in the practice of medicine when we know full well that she can never render anything but a service much inferior to that of the trained physicians of the future.

The practice of obstetrics carries with it much more than standing by while the natural forces of labor complete the act as best they may. Obstetrics is an important branch of medicine, and to practice it safely and successfully implies a knowledge of general medicine, as well as a knowledge and appreciation of the physiology and pathology, the normal and the abnormal, of the child-bearing process. The function of the physician in midwifery cases is to secure for the woman the best possible preparation for her labor, to accomplish her delivery safely and to leave her, so far as possible, in good physical condition; to prepare the mother for and to teach her the importance of nursing her baby, and to do everything that is possible to bring this about. A careful physical examination of the patient in each case, a thorough knowledge of her pelvis and a careful study of her previous labors may be indispensable to the successful conduct of her approaching confinement. It will perhaps never be known how many thousands of babies are sacrificed annually at birth because nothing is known of certain deformities and abnormalities until labor is well advanced. Every intelligent physician knows how important is the routine examination of the urine during pregnancy, and yet in more than 50 per cent. of all the labors occurring in this country, the urine is never examined until perhaps the woman is in convulsions. Then, too, think of the thousands of women who are annually invalided as the result of unrepaired injuries to the birth-canal and from infection, to say nothing of the many who lose their lives. Those familiar with the subject believe that this appalling condition of affairs can be very largely prevented by providing skilled medical attention before, during and after childbirth. This means that pregnancy in each case must be carefully supervised, labor scientifically conducted and the mother and baby left so far as possible in good physical condition, which cannot be accomplished by untrained, non-medical individuals like the midwives.

Another very pertinent objection to the midwife is that she has charge of 50 per cent. of all the obstetric material of the country without contributing anything to our knowledge of the subject. As I shall point out, a large percentage of the cases are indispensable to the proper training of physicians and nurses in this important branch of medicine. The whole country is indebted to Williams[1] for his studies on the midwife problem in this country. He has done a great and lasting service in laying bare the facts in regard to the teaching and practice of obstetrics in this country. On the other hand, Dr. Jacobi, in his inaugural address[2] at the meeting of the American Medical Association at Atlantic City in June of this year, has taken, in my opinion, a decidedly backward step as regards both the teaching and practice of obstetrics. His recommendation that 200 schools for midwives be established in the United States is as impractical as it would be impossible of accomplishment. According to Williams, but a single medical school in the country has adequate facilities for teaching obstetrics properly to medical students. A marvelous thing will have been accomplished if, during the next fifteen or twenty years, thirty institutions similar to the Sloane Hospital in New York City are established to meet the requirements of the thirty-one medical schools needed in this country, according to Flexner. To accomplish this would require the expenditure of about thirty millions of dollars and an annual budget of more than three millions of dollars to maintain them. So much is needed before we can hope to give to the students graduating from our medical schools adequate training in obstetrics, and before we can hope to compete with the German medical schools. If then, in addition, an attempt be made to establish the 200 schools recommended by Jacobi, or 170 additional ones, using the university schools also to train midwives, as in Germany, some idea may be gained of the utter foolishness of such a recommendation.

It is, at present, impossible to secure cases sufficient for the proper training of physicians in obstetrics, since 75 per cent. of the material otherwise available for clinical purposes is utilized in providing a livelihood for midwives. If schools for midwives were established in

1. Williams, J. Whitridge: Medical Education and the Midwife Problem in the United States, THE JOURNAL A. M. A., Jan. 6, 1912, p. 1.

2. Jacobi, A.: The Best Means of Combating Infant Mortality, THE JOURNAL A. M. A., June 8, 1912, p. 1735.

all the larger cities of the country, a large number of additional cases would become necessary for training the midwives and we should soon find ourselves in the anomalous position of favoring the elimination of physicians from the practice of obstetrics, by still further depriving them of clinical material for their training in order to provide trained midwives to supplant them. If, moreover, the money which would be necessary for establishing and maintaining 200 schools for midwives, together with what would be necessary to supervise the midwives properly in their practice afterward, were used to pay physicians and nurses to care for the midwife cases, sufficient money would be available, to say nothing of the $5,000,000 which it is estimated is collected annually by midwives in this country and which should be paid to physicians and nurses for doing the work properly.

The question in my mind is not "what shall we do with the midwife?" We are totally indifferent as to what becomes of her as compared with the very vitally important question of how we shall provide competent medical service for the hundreds of thousands of the very best of our women while they are fulfilling the sacred obligations of maternity. And in this we include all classes, for we realize that obstetrics is frequently as poorly done among those who are able to pay for competent service as among the poor who are dependent on midwives or on public charity. The answer is to be found in providing proper training and adequate compensation for physicians and nurses who alone should do the work.

It is generally recognized that obstetric teaching in this country is woefully deficient. There has been a dearth of great obstetric teachers with proper ideals and motives, but the deficiency in obstetric institutions and in obstetric material available for teaching purposes has been even greater. It is to-day absolutely impossible to provide material enough to give to medical students before graduation anything more than the merest smattering in practical obstetrics. So far as I have been able to learn, in all but a few medical schools in this country, the students deliver no cases in a hospital under supervision, receive but little even in the way of demonstrations on women in labor and are sent into outpatient departments to deliver at most but a half dozen cases. When we recall that abroad the midwives are required to deliver in a hospital at least twenty cases under the most careful supervision and instruction before being allowed to practice, it is evident that the training of medical students in obstetrics in this country is a farce and a disgrace to a great nation, which in other branches of medicine holds high rank. It is then perfectly plain that the midwife cases, in large part at least, are necessary for the proper training of medical students. If for no other reason, this one alone is sufficient to justify the elimination of a large number of midwives, since the standard of obstetric teaching and practice can never be raised without giving better training to physicians.

On the other hand, it is equally plain that every woman has a right, as a citizen and as a mother, to such care during and following childbirth as shall preserve her and her children in life and health. It is not difficult to prove that this cannot be accomplished by midwives, but that it can be and is being done by students of medicine under careful supervision and by recent graduates in medicine who have been trained in well-equipped and properly conducted maternity hospitals. In the Boston Lying-In Dispensary, for example, about 2,000 consecutive cases of labor have been conducted by medical students without a single maternal death and similar records are to be found all over the country where maternity dispensaries exist.

I believe that the midwife should be eliminated as rapidly as possible, but I do not believe that this can be accomplished at once or perhaps even very rapidly. Legislation will not eliminate the midwife, unless hand in hand with such legislation provision is made to take her place. While a substitute is being provided she must be supervised in her work. She should, however, not be given a license but should be given a certificate to be renewed from time to time or canceled as deemed advisable under the circumstances. Licensing her will not add to her knowledge and will not make her more efficient, but will place on the state permanent responsibility for her work. No attempt should be made to establish schools for midwives since, in my opinion, they are to be endured in ever decreasing numbers, while substitutes are being created to displace them.

Our present system of caring for the so-called "charity cases" is entirely wrong and this does not apply to midwifery cases only. Our charities are for the most part but poorly investigated and supervised and are inefficiently administered. Much of this charity is not legitimate and the cost is unjustly distributed. Physicians have been called on to do much more than their share. There is not the slightest reason why the physician should give his professional services without pay, as it is no more his business to administer without compensation to the dependent and sick poor than that of any other citizen. The fact that he is especially fitted so to serve them does not in any wise alter the situation. The poor when ill are the state's charges, just as much as when they must be fed, clothed and sheltered, and the state should minister to the needs in one case just as much as in the other. Until physicians are justly compensated for their services to the poor, the poor will not receive adequate medical attention. In the long run individuals receive just about the service to which they are entitled by the compensation provided. This is just as true in medicine as in any other field of endeavor, and so far as I can see there is not the slightest reason why it should not be. Public charities of all kinds should be placed on a strictly business basis, should be well organized, thoroughly supervised and all the workers should be justly compensated.

The placing of the burden of medical service to the poor on physicians, without compensation, has led them to seek in return excessive fees from those who can pay, with the result that much harm has been done to the cause of medicine. The practice of medicine has been thereby converted into a trade, and commercialism has destroyed much of its higher and finer side and has done untold harm in the attitude which the public should have toward the physician and the schools which educate him. And for this the leaders of the profession, the teachers of medicine, have been largely responsible. They have frequently used their professorial appointments for personal profit, prostituting the ideals of medicine to their greed for gold and "exploiting their patients at the expense of the entire profession." This does not apply to the so-called laboratory men, who have worked on modest salaries and yet have shown an unselfish devotion and enthusiasm which have astonished the whole world, and who have contributed practically the only knowledge in medicine which has been worth while. Such men as Koch, Behring, Ehrlich, Flexner and a score of others are striking examples of medical men who have done a lasting service to humanity without levying

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a tribute on it and stand out in striking contrast, for example, to an equal number of American surgeons whose very work has been made possible only through that of the laboratory workers but who, unlike them, have demanded from their patients unreasonable and dishonest fees for no other reason than that they had the opportunity for doing so. No one questions the justice of the man of means paying in accordance with his ability toward the medical care of the dependent poor and that on this basis the burden should be equitably distributed, but it is the business of the state to collect such moneys for the purpose and not the business of private persons to levy tribute on individuals of means on the plea that they are serving the poor without pay. The state should pay the physician adequately for all his services to the poor and should collect by taxes from all the people their just share of the money necessary to care for its charges.

In medical charities economy and efficiency are all important and can best be secured when such charities are utilized for teaching purposes. Since patients in teaching institutions receive the best possible attention at the least possible cost to the state, medical education and medical service to the poor should go hand in hand. Both are matters for the state rather than for private individuals and the state should therefore see that each contributes to the other all that is possible. It is not generally appreciated that medical schools should be first of all educational institutions rather than medical institutions, that they should, moreover, be public service organizations and exist for the public good, as do other educational institutions, and that the teacher of medicine should be an educator in the highest sense of the term and should stand in the closest relationship to all the problems of medical education, medical practice, eugenics and social service. He should spend his life, therefore, as a public servant and should use his calling and the innumerable possibilities and opportunities which go with it, not to enrich himself at the expense of the profession but to serve his generation in all that pertains to the public good. For all these reasons medical schools should be liberally supported by the state, as in Germany, where medical education and medical service have reached their greatest development. The number of medical schools should be limited to the actual needs of the country, and medical teachers should be put on liberal salaries and should be required to devote their entire time to teaching, research and the care of hospital and dispensary patients. Until this is done, it will not be possible to prevent many medical teachers from seeking and obtaining professorial appointments for the purpose of advancing their own personal interests

But, you may ask, what has all this to do with the subject of my paper? This much, that men and women of influence and of means will never contribute all that is necessary in money and in legislation to medical education and medical charities, until they have more confidence in the ideals and motives of those who administer them. And this brings up a very important matter which cannot be neglected in such a discussion as this, namely: the administration of medical charities — hospitals and dispensaries. Each supplements the work of the other and if properly coordinated they cover, without conflict, the entire field of medical service to the poor. Each is therefore indispensable and each has its legitimate field. In so far as they care for the state's charges, they should be supported by the state, the one just as much as the other. All patients applying for care through either should be rigidly investigated and required to pay to the extent of their ability. To this class belong all patients who are unable to pay adequate physicians' fees, whether they can pay all, a part or none of the cost to the hospital or dispensary of caring for them. In this investigation all the facts should be taken into consideration — the size of the family, the income and cost of living, the actual legitimate earning capacity of the family; while the physical health and mental equipment must not be overlooked. If the income, whatever it be, is entirely needed for the necessities of life, it ought not to be used to pay physicians' fees. Such individuals cannot, therefore, be looked on as of any legitimate financial value to the physician, to whom their care by hospitals and dispensaries should give no cause for offense. The manifest and professed purpose of the science and art of medicine is the prevention and cure of disease. The physician exists therefore for the benefit of the patient and not the patient for the benefit of the physician; and the solution of this matter will not be reached until this fact is fully appreciated and until it governs our attitude toward providing medical service for the dependent poor. Any system, therefore, which does not provide the most economical service consistent with essential efficiency is wrong. On the other hand, physicians should not be criticized for not giving medical service gratuitously to such patients; on the contrary, they should be paid for their services to the poor, and this applies with equal force to nurses and social workers.

In Pennsylvania, the hospitals and dispensaries are paid by the state to the extent of the difference between what it costs to care for their patients and the receipts secured from them and from private gifts. This is as it should be.

Staff physicians in hospitals and dispensaries, who are given a monopoly of clinical material and therefore possess exceptional opportunity for the development of skill and the establishment of a reputation, should not be allowed to use their positions to gain a monopoly over private patients as well. This is the great evil of the present hospital system and can be prevented only by putting staff physicians and their assistants on salaries, and requiring them to devote their entire time to the work of the hospital, to research and to teaching. In the larger cities where medical schools exist, all patients for whom the state is responsible, or as many thereof as may be necessary, should be cared for in the hospitals in which the staff positions are held by the members of the medical faculties. In this way a tremendous amount of clinical material would become available for teaching purposes, and students and practitioners of medicine would be given an opportunity of securing any desired amount of training in chosen branches of medicine, while the patients themselves would receive the most efficient service at a minimum cost to the state. Nothing would be taken from the physicians in the way of income, their opportunities for advanced medical training would be much increased and the medical heads of such hospitals would become invaluable public assets as teachers, investigators and consultants. The salaries of the staff physicians and of the clinical members of the medical faculties could be provided, if necessary, by fees from the necessary number of private patients.

The vast majority of private patients should, however, be cared for in private hospitals supported by private or corporate capital. No one objects to any physician making all the money to which his skill and reputation

entitle him, but he has no right to do so on the investments of public moneys.

From what has been said it would appear that the elimination of the midwife is to be brought about in time through the establishment of obstetric charities consisting of maternity hospitals and maternity dispensaries with all that goes with them in the form of social service, visiting nurses, prenatal work, relief work, etc. The hospital is to care for all who, for one reason or another, cannot secure proper attention at home, and the dispensary for those who are delivered at home. The majority of women will always be cared for at home, and it is desirable that they should be when conditions permit it. A mother with a number of children cannot usually leave them to advantage, and while it is true that physically she cannot and should not care for them, her presence in the home is necessary to order and discipline. Then, too, the cost of caring for patients in hospitals is much greater than in their own homes. Dispensary patients, moreover, are more likely to do for themselves all that they are able to do and thus be not so entirely dependent on help. Both the hospital and dispensary should be in charge of one head in the form of a medical director and, in medical centers, both institutions should be a part of, or closely affiliated with, a medical school.

In cities of the first and second class, especially where medical schools exist, the midwife can in time be entirely eliminated through the establishment and extension of obstetric charities — hospitals and dispensaries. The vast majority of patients who are unable to pay physicians can be cared for by medical students, provided the requirements for graduation are increased so as to give students the necessary training in obstetrics.

My own feeling is that before going into private practice each student should be required to deliver personally not less than fifty cases under careful supervision, and should also be taught to do on the living subject all the obstetric operations which the granting of his diploma gives him license to perform, as I hold that it is little less than criminal to permit practitioners of medicine to jeopardize the life and health of human beings by performing on them operations which they had not done and perhaps had never seen performed in their student days. The average practitioner who gains his experience in obstetrics by operating solely on his own responsibility rarely, if ever, learns to do it safely, and therefore always remains a menace to his patients, and should he eventually become an accomplished operator, his knowledge has been gained at the cost of much invalidism and of a number of deaths. My argument, therefore, is that if he must acquire the knowledge, it is much better that he should do so under careful supervision and instruction. The public should learn that it is the duty of every citizen, if for no other reason than that of the safety of his own family, to insist that students of medicine be not only supplied with clinical material, but that they be required to utilize it in acquiring the knowledge which is indispensable to efficiency in the practice of obstetrics. If the midwife cases and such others as are dependent on public charity were used for teaching purposes, not only would the patients themselves receive excellent care but also sufficient clinical material would be available to give every graduate in medicine such obstetric training as would make him a safe and efficient practitioner.

In the larger cities, therefore, maternity hospitals and maternity dispensaries, properly coordinated, well equipped and efficiently conducted, offer the sane and logical solution of the midwife problem. In the smaller cities and towns the problem is somewhat more difficult, but even there it can be very largely handled by utilizing as maternity dispensary stations the many small hospitals, which are being established so rapidly all over the country. By increasing the annual hospital budget to include such dispensary service, all patients unable to pay physicians, including also the vast majority of midwife cases, could be provided for at a very reasonable cost per patient. In this way the pupil nurses in such hospitals could be given the training in obstetric nursing which is now so generally required for the registration of graduate nurses, while the medical service could be very largely supplied by recent graduates in medicine serving as interns in such hospitals, and thereby acquiring, under proper supervision, invaluable experience in operative obstetrics. In the rural and other districts where there are no hospitals and where there will always exist a lack of medical practitioners, the midwife must continue her work, "doubly dangerous" because of the scarcity of physicians, unless the state places a higher value than heretofore on human life and health and comes to the rescue. On this point, I am in entire agreement with Professor Pritchett of the Carnegie Foundation in saying that "a sanitary service, subsidized by the state, will alone render efficient relief in backward districts without demoralizing the profession."

In attempting to secure certain data with regard to midwives in several of the large cities, I have been much disappointed. In Boston, for example, with 18,000 births reported last year, it is not known how many midwives there are or how many cases are delivered by them, although birth registration is compulsory. As Boston has a much smaller percentage of foreign-born population than Pittsburgh, it would seem fair, on the basis of Pittsburgh statistics, to estimate that the number of cases cared for in Boston by midwives and dispensaries combined would not exceed 30 per cent. As the dispensaries care for about 19 per cent., the midwives probably deliver not over 11 per cent. or 1,980 cases.

In New York City, according to Dr. Baker, 51,996 births, or 40 per cent. of the total number in 1911, were in the hands of about 1,300 midwives. In Philadelphia, in 1911, the estimated number of births was 44,000 and the actual number registered was 40,066, of which latter number, 21.09 per cent., or 8,450, were delivered by 194 midwives. In Baltimore, in 1911, there were but 9,283 reported births, showing very incomplete returns. On the basis of the United States Census Reports, the annual birth-rate for Baltimore should be about 17,000 and if the midwives deliver 50 per cent. of this number they care for about 8,500 cases. The number of registered midwives in Baltimore is 162.

There were 15,422 reported births in Pittsburgh in 1911, of which 4,864, or 31.53 per cent., were delivered by 150 midwives. Of 12,839 births reported in Cleveland from July 1, 1911, to July 1, 1912, 5,127, or 40 per cent., were in the hands of 266 midwives.

In Chicago, registration is not compulsory so that complete statistics are not available. Dr. Henry G. Ohls, who has gone over the records of all births reported between Jan. 1 and July 1, 1912, gives the first reliable birth statistics, as far as they go. He finds in the total of 19,939 births reported during the six months that 43.55 per cent., or 8,445, were in the hands of an unknown number of midwives. Dr. Ohls estimates the number of births in Chicago for 1912 to be 57,438. On the basis of his statistics, 50 per cent., or 28,719, ought

to be a fair estimate of the number of cases delivered by midwives.

On the basis of the number of students graduating annually (1911-12) from the combined medical schools in Boston, New York, Philadelphia, Baltimore, Pittsburgh, Cleveland and Chicago, it is interesting to see to what extent the midwife cases in these cities could be handled by students alone.

In the data given, it would appear that in some instances, at least, not all of the cases credited to undergraduate students were actually delivered by them, since many of the deliveries were most probably demonstration cases, observed collectively by a number of students, while the actual delivery was being conducted by one of their number under supervision. Then, too, in certain cities, large numbers of cases are delivered by graduate physicians doing postgraduate work and their cases are also included among those credited to undergraduate students. These facts doubtless account, to some extent at least, for the great difference in the number of cases reported as delivered by students in the different cities, and must be taken into consideration in interpreting the following figures. In this study it is estimated that, if midwives did not exist, at least 25 per cent. of the patients now under their care could afford to and would employ physicians.

1. Boston: Number of students, 190; cases delivered by students in outpatient departments, 3,500 (19 per cent.); midwife cases, 1,980 (11 per cent.). Cases credited to each student, 18, and 10 additional to handle the midwife cases, or a total of 28 cases per student.

2. Philadelphia: Number of students, 437; cases delivered by students in outpatient departments, 2,566; midwife cases (less 25 per cent.), 6,338. Cases credited to each student, 6, and 15 additional to handle the midwife cases, or a total of 21 cases per student.

3. Baltimore: Number of students, 334; cases delivered by students in outpatient departments, 1,746; midwife cases (less 25 per cent.), 6,375. Cases credited to each student, 5, and 19 additional to handle the midwife cases, or a total of 24 cases per student.

4. Pittsburgh: Number of students, 66; cases delivered by students in the hospital and dispensary, 264; midwife cases (less 25 per cent.), 3,648. Cases credited to each student, 4, and 55 additional to care for the midwife cases, or a total of 59 cases per student.

5. Cleveland: Number of students, 66; cases delivered by students in outpatient departments, 605; midwife cases (less 25 per cent.), 3,845. Cases credited to each student, 9, and 58 additional to care for the midwife cases, or a total of 67 cases per student.

6. Chicago: Number of students, 608; cases delivered by students in outpatient departments, 1,927; midwife cases (less 25 per cent.), 21,540. Cases credited to each student, 3, and 35 additional to handle the midwife cases, or a total of 38 cases per student.

7. New York City: Number of students, 325; cases delivered by students, 3,780; midwife cases (less 25 per cent.), 38,997. Cases credited to each student, 12, and 120 additional to handle the midwife cases, or a total of 132 cases per student. If the students delivered 50 cases each or a total of 16,250, there would still remain 26,527 cases to be cared for, so that in New York City at least, it would seem that the midwives must do a large part of the work for some time to come, unless the city or state does a considerable part of the work through dispensaries, employing physicians and nurses on salaries. At the same time this would not be so much of an undertaking as it at first appears, since fully 50 per cent. of the 38,997 midwife cases could pay to dispensaries, as they now pay to midwives, $10 each and the remainder could pay at least $5 each, the minimum midwife fee in New York City. If the midwives were eliminated in New York City, all their cases could be handled through maternity dispensaries for an additional expenditure of not over $100,000 a year, provided such dispensaries received as much in fees as the midwives now do.

I shall conclude my paper with the plan which we have adopted for the solution of the midwife question in Pittsburgh.

It will perhaps be best appreciated what the Pittsburgh plan is when I say that it is, in its development, the concrete expression of the views set forth in this paper. If the recommendations which have been made appear visionary and impracticable, it must be remembered that a number of them are already in operation in Pittsburgh and are working out beautifully and that we fully expect to carry out the entire scheme within the next half dozen years.

About three and a half millions of dollars are available for the building, equipment and endowment of a woman's hospital, to be built in Pittsburgh during the coming year; and the sum of $50,000 has already been subscribed, from an entirely different source, for the maintenance of a maternity dispensary which was opened about six months ago.

The hospital, which is the first of its kind to be established in this country, has been modeled largely after the well-known *Frauenkliniker* of Germany and will therefore care for both obstetric and gynecologic cases. Abraham Flexner, in his "Medical Education in Europe," expresses exactly the point of view which we have taken for years and which now finds its expression in the new Magee Hospital. He says, in speaking of the German clinics for women, that "the women's clinic combines obstetric and gynecologic wards. Separation into two specialties tends to make a midwife of the obstetrician and an abdominal surgeon of the gynecologist, to the neglect of the fundamental pathologic and physiologic problems in both cases. Consolidation avoids the necessity of drawing arbitrary lines by way of making two specialties where Nature has made but one: for obstetrics and gynecology have a single physiologic and anatomic point of departure, namely the child-bearing function."

The new hospital will have accommodations for 125 adult patients in the wards and twenty-five private rooms. It is peculiarly well adapted for teaching purposes, having an operating and teaching amphitheater, a number of examining rooms, delivery rooms and recovery rooms, research laboratories, a medical library, museum and the necessary offices and other rooms for the medical director and his assistants. There are also rooms for photography, *x*-ray and hydrotherapeutic departments and an isolation department for infected cases, with the necessary operating and sterilizing rooms. In the private pavilion there is a private gynecologic operating-room, several private delivery and recovery rooms, a cystoscopy room, etc. The institution will be erected in the center of a ten-acre plot of ground and will be surrounded by a number of separated and isolated gardens for private patients, ward patients, nurses, physicians, etc.

The medical director of the hospital is also professor of obstetrics in the University of Pittsburgh. He resides with his family on the hospital grounds, is paid

a salary sufficiently large to make him independent of private practice and to enable him to devote all his time to the work of the hospital, to research and teaching. All fees received from private patients go into the hospital treasury.

The Pittsburgh Maternity Dispensary, within two blocks of the Magee Hospital, is closely affiliated with the hospital, having the same directing head. It is located in two large houses of twelve rooms each and has dormitory accommodations for a dozen physicians and students, as many nurses and social workers, in addition to the dispensary rooms proper. The present staff of workers consists of a social worker, two graduate physicians, and three graduate nurses, all on salaries and devoting their entire time to the work of the dispensary; also a number of medical students. The number of workers will be increased as the growth of the work demands it.

The present hospital, housed in temporary quarters, will care for about 350 cases of labor during the present year and we expect to care for as many more cases in the dispensary during the first year of its existence, or a total of 700 cases, all available for teaching purposes. Our senior medical students, forty-five in number, will during the present year witness at least fifteen deliveries each, of which number each student will personally deliver six cases under constant supervision and instruction, three in the hospital and three in the dispensary.

The work in Pittsburgh is young, but the outlook is most promising and we feel that we have in the combination of hospital and dispensary, both teaching institutions, the solution of the midwife problem. And what can be done in Pittsburgh can be done in every other large city in the country. The creation of obstetric charities, such as I have attempted to describe, and the education of the people will, in time, make the midwife unnecessary and her elimination inevitable.

Forbes and Halket Streets.

TREATMENT OF DYSENTERY DUE TO INFECTION WITH ENTAMOEBA HISTOLYTICA

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It is but a few years since all forms of dysentery were grouped as acute and chronic, as endemic and epidemic, or as tropical and otherwise, without any attempt being made to differentiate them on etiologic grounds, and hence a variety of pathologic conditions due to as many different factors was looked on practically as one disease and treated as such solely for the reason that there was in common one symptom: dysentery.

It is now realized that there are many causes, some infective and others toxic, and unless careful differentiation is made we are likely to err grievously in our management and treatment.

The term "tropical dysentery" is also misleading and has been regarded more or less as synonymous with amebic dysentery. The latter affection is not limited to the tropics, but extends well into the temperate zones. It has been as much dreaded by the tropical resident as any of the endemic diseases and, directly or indirectly, has been responsible for a great many deaths.

It can be shown that this disease has lost its terrors and plays a minor rôle in the forms of dysentery encountered in the Canal Zone, as far as its incurability, chronicity and secondary effects are concerned.

The following forms of dysentery are more or less frequently encountered in Ancon Hospital and for the most part can be readily differentiated:

1. Amebic dysentery, caused by the *Entamoeba histolytica* of Schaudinn.
2. Amebic dysentery, caused by the *Entamoeba tetragena* of Viereck.
3. Bacillary dysentery, caused by Shiga's or Flexner's bacillus, and the allied varieties.
4. Bilharzial dysentery, caused by the *Schistosomum mansoni*.
5. Balantidial dysentery, caused by the *Balantidium coli*.
6. Malarial dysentery, occurring in the course of a general malarial infection.
7. Dysentery due to tuberculous ulceration of the intestine.
8. Nephritic dysentery, associated with acute diffuse nephritis or secondary to a chronic nephritis with an acute process superadded.
9. Diphtheritic colitis, associated with a diphtheritic or a gangrenous inflammation of the mucous membrane of the whole colon, rectum and part of the adjacent small intestine—a very fatal form.
10. Dysentery in the course of pellagra.
11. Dysentery resulting from the ingestion of decomposing meats or fish.
12. Dysentery resulting from the ingestion of infected milk. The last two may be bacillary in character.
13. Dysentery secondary to cardiac or to hepatic disease.
14. Clinical dysentery, which comprises the greatest number of cases and embraces that large group of undetermined etiology which occurs here in large numbers usually about May—about the close of the dry and the beginning of the wet season. Neither microscopic nor cultural findings have been able to determine its etiologic factor. These cases, however, are not very severe, lasting usually from four to ten days and requiring no specific treatment. If, however, any such dysenteries be associated with *Entamoeba coli*, by the uninitiated they are grouped as amebic dysentery, and hence give rise to mistaken statistics.

A brief glance at this clinical and pathologic classification will suffice to show how important it is to ascertain the etiologic factor underlying the dysentery concerned before treatment is initiated.

One reason that there is such disparity of opinion between different authors as to the best methods of treatment is failure to determine the etiologic factor before treatment is begun; that dysentery is but a symptom and not a pathologic entity is not appreciated.

During the past year 110 cases of all classes of dysentery were admitted to Ancon Hospital, and of this number only twenty-one were due to infection with *Entamoeba histolytica*.

Owing, however, to the importance of this form of dysentery in the sick-rate in the tropics, and its recurrence, chronicity and complications, the greater part of this paper will be devoted to the method of treatment adopted and the results obtained.

Three distinct varieties of *Entamoeba* have been recognized in the Canal Zone as parasitic in the human alimentary canal: the *Entamoeba histolytica* of Schaudinn, the *Entamoeba tetragena* of Viereck and the *Entamoeba coli* of Schaudinn. The last-named is apparently harmless, having been found in the dejecta of

dysenteric and non-dysenteric patients alike; we know that it has persisted for at least three years in two patients under constant observation, without having given rise to any dysenteric symptoms. Therefore we do not consider it as a pathologic species.

The *Entamoeba histolytica* is encountered here most frequently and is responsible for almost all of our cases of amebic dysentery. If the disease produced by this species is not properly treated it tends to relapse and to become chronic; by metastatic development it is also responsible for nearly all of the hepatic, pulmonary and brain abscesses that occur in Ancon Hospital.

In the treatment of dysentery associated with this species we have secured brilliant results by the use of bismuth subnitrate, as will be shown later.

During the past year, Dr. S. T. Darling, Chief of the Board of Health Laboratory, has shown that *Entamoeba tetragena* also is present here. In another case at present in the hospital, which will be reported by Dr. W. M. James, and the clinical course of which has been followed by him for several months, it has been shown that *tetragena* infection is associated with a dysentery, chronic in character, tending to relapse, and that this species is not affected by the bismuth treatment, which is so destructive to *histolytica*. It is possible that against *E. tetragena* ipecac has a specific action. If this be true this fact will tend to harmonize the differences of opinion held by various authors as to the value of the ipecac treatment in amebic dysentery. In James' case, rest in bed and dietetic treatment has been all that has been necessary on two occasions to clear up the symptoms, but repeated doses of Epsom salts have twice brought about a relapse. The dysentery does not appear to be so severe as that produced by *histolytica*, but its tendency to relapse makes it an important factor in tropical dysenteries.

TREATMENT

From a previous article I quote the following paragraphs on treatment:[1]

A variety of methods have been tried in this hospital with varying success. They resolve themselves into oral medications and local treatment in the form of irrigations. Among the former may be mentioned castor oil, magnesium sulphate, opiates, ipecac, and bismuth and opium; among the latter, quinin irrigations in varying strengths, but usually 1 to 500, thymol irrigations 1 to 2,000 or 3,000, combinations of them, silver nitrate 0.25 per cent., boric acid, starch and laudanum, tannic acid, copper sulphate, normal salt solution and plain water, warm and cold.

Of all the different methods used, one stands out preeminently; that is, bismuth by the mouth, and simple irrigations, either normal saline or plain water per rectum. The method is simple, harmless and physiologic, and, as our statistics show, more than justifiable. Absolute rest is enjoined, an absolute milk diet, of which there should be an abundance, saline or water irrigations and bismuth subnitrate in heroic doses. We do not object at the beginning, if tenesmus and distress be very severe, to an occasional hypodermic of morphin and atropin, but as a routine measure it is not considered good treatment.

This method of treatment was begun at Ancon Hospital in 1908 and the uniformly satisfactory results were such that it remains to-day our standard. Of the last sixty-eight patients treated in this manner, extending over a period of thirty months, we have not lost one whose case was uncomplicated. Further, in 190 cases fully treated by this method we have had no traceable relapses and no liver abscess.

Any method of treatment to be of value must be physiologic. That our method meets this requirement I shall now endeavor to prove. The responsible organism, that is, the *Entamoeba histolytica* of Schaudinn, and the pathologic condition have already been described;[1] also the probable symbiotic character of the organism, that is, the necessity of associated growth with some putrefactive or fermentative bacteria. In this connection it is interesting to note that the fecal odor in the bowels is confined to the lower part or extends but slightly into the ileum, and that the location of the amebic ulceration corresponds precisely. It is stated that the lesions generally occur in the cecum, sigmoid and rectum. This can be explained on the basis that these are the more dependent parts of the bowel, or that it is in the cecum where the entamebas first come in contact with the putrefactive bacteria, there meeting the symbiosis necessary to their existence; it is in the rectum and sigmoid, and also in the cecum, that the feces with their bacterial contents are longest in contact with the mucous membrane of the bowel.

It is with a consideration of these conditions, that we advocate, after a preliminary dosage of castor oil, the following treatment:

1. Rest, in order to increase the patient's resistance and give the minimum of movement to the bowel. This is classical treatment in all acute infections.

2. A generous milk diet, because it is physiologically nutritious, admits of a minimum of intestinal putrefaction, and is practically absorbed before it reaches the large bowel, which, owing to its ulcerative condition, is more or less physiologically inert.

3. Saline or plain water irrigations, one to three daily, purely for the purposes of lavage in order to rid the bowel of toxic products.

4. The administration of bismuth subnitrate in heroic dosage. We give a heaped teaspoonful, equivalent to about 180 grains by weight, mechanically suspended in almost a tumbler of plain or preferably effervescent water, every three hours, night and day in severe cases, lessening the amount only when improvement takes place. The mechanical suspension in a large amount of water is essential, otherwise it is prone to form a paste, thus lessening its physiologic effect. When the stools are fewer in number and the tongue becomes clean, the number of doses is reduced to three or four daily. In very chronic cases it is wise to continue one or two doses daily for a month after convalescence is established. The absolute milk diet is not departed from until the tongue clears, the tenderness over the bowels disappears, the lack of elasticity in the abdominal skin returns to normal, and the number of stools has been reduced to one in twenty-four or forty-eight hours. Then a normal diet may be gradually resumed as in convalescence from typhoid. We do not object to, but recommend, plain fruit-juice once or twice a day instead of the milk during the acute attack.

How does bismuth subnitrate act? In 1883, Theodore Kocher demonstrated that the insoluble preparations of bismuth are actively antiseptic to fermentative and putrefactive bacteria. It is further known, clinically, that on the mucous membrane of the intestine, bismuth has a local sedative and astringent action. In the former paper by Deeks and Shaw it was suggested that the curative power of bismuth nitrate in amebic dysentery rested largely on its antiseptic properties against the symbiotic putrefactive or fermentative bacteria. Now,

1. Deeks and Shaw: Treatment of Amebic Dysentery, Med. Rec., New York, Nov. 13, 1909.

however, we are led to believe that the process is more elusive than we had believed. Dr. S. T. Darling has shown that the bismuth salt locks up the free sulphur in the intestine on the surface of its crystals and even seizes on the nuclear sulphur of the bacteria, turning it very black. Bismuth salts also affect the general flora of the intestines, destroying certain organisms and influencing others. Dr. W. M. James of this hospital has shown that the bismuth salts have a direct influence on the entamebas or on their food-supply, as degenerating organisms in large proportion are found as soon as the bismuth is seen in the stools. The entamebas show early degenerative changes. They become vacuolated and swell up, and the nuclei are plainly visible, and fragment. As I have noticed repeatedly, the characteristic fecal odor disappears after bismuth in this dosage.

After a few days, depending on the severity of the lesions, the free sulphur resulting from bacterial decomposition of proteins is all combined and the bismuth salt, scarcely changed in appearance, is seen in the dejecta. In only two instances in our experience have *Entamoebae histolyticae* been observed in the stools after four days' treatment by the bismuth method, no matter how grave the condition was when the treatment was begun. In one of these cases entamebas were found alive on the fifth day but not afterward, and in the other, after disappearing on the third day, they reappeared again on the eighth day in large numbers, evidently from the discharge of an amebic abscess in the intestinal wall, as the patient afterward made an uninterrupted recovery.

Untoward effects of large doses of bismuth are frequently referred to in the literature. We have had four cases showing a form of bismuth subnitrate poisoning. Two were in patients suffering with diffuse nephritis and associated acute colitis; one in a patient with carcinomatous colitis, and one in a patient with pernicious malaria with diarrhea. The patients became cyanotic, but with full pulse and good heart action. Though the symptoms were alarming, recovery immediately followed the administration of magnesium sulphate. The phenomena were probably due to the liberation of nitrous oxid or some similar gas in the blood, through the decomposition of the bismuth salt, or, perhaps, to contamination of the bismuth salt with arsenic, as suggested by Dr. H. T. Summersgill.

One more drug should be mentioned because of its general use in the treatment of this affection: opium and its derivatives. Though an occasional hypodermic of morphin and atropin may be administered at the onset of the attack, particularly if the tenesmus is severe, still we deprecate its general use in the treatment of this affection: (*a*) because it interferes with the production of enzymes and enzyme digestion and (*b*) because it lessens intestinal peristalsis, thus favoring the retention of toxic products that irritate the normal mucous membrane, which we should endeavor to eliminate. Exceptional cases are occasionally seen in such extreme conditions of emaciation and exhaustion and showing such toxic symptoms that it is not wise to temporize; but immediate surgical interference is then indicated. The method which has given the most satisfactory results is that devised by Dr. A. B. Herrick of this hospital. He performs a wide open cecostomy, which has three great advantages: (1) it prevents any ingested food from reaching the ulcerated surface of the colon; (2) it admits of a more generous and varied diet; (3) it enables free irrigation of the large bowel, so as to wash out toxic products. The sole objection is the length of time it incapacitates the patients, because a restorative operation is necessary later. This, however, is of small importance, as by its means alone some lives can be saved.

No matter what methods of treatment are advocated the burden of proof as to their respective values rests on the results, temporary or permanent. Particularly is this true of amebic dysentery with its well-known tendency to recur or relapse. It will be my object now to analyze the results of methods of treatment conducted in Ancon Hospital from the beginning of 1905 to the end of 1911, a period of seven years, and trace as far as possible the previous and subsequent histories of the patients for relapses and complications.

During this period we have admitted 282 cases, diagnosed as amebic dysentery, with a total mortality by all methods of treatment of sixty-one, or 21.6 per cent.

TOTAL ADMISSIONS TO ANCON HOSPITAL, CASES OF AMEBIC DYSENTERY AND PERCENTAGE OF DEATHS

Year	Total Admissions	Amebic Dysentery	Deaths	Percentage of Deaths
1905	7,606	10	3	30
1906	13,172	55	20	36
1907	14,012	88	26	29
1908	15,378	27	5	18
1909	18,531	44	3	6.8
1910	20,122	37 (34)	4 (1)	10.8 (2.9)
1911	22,275	21	0	0

It can be seen at a glance that, notwithstanding our increase in hospital admissions, there has been on the whole a decrease in amebic cases, and a very marked decrease in the mortality in successive years. It has been argued that the lowered rate of mortality is due to improved sanitation. We are willing to concede that sanitation has wrought miracles in lessening the number of cases, but as to mitigating their severity, we join issue. Some of the patients admitted could not have had a more severe attack and remain alive; in fact, some have died within twenty-four hours after their admission. From July 1, 1909, to Dec. 31, 1911, a period of thirty months, seventy-four patients were admitted; the cases were complicated and uncomplicated and of all grades of severity. Necessarily, in a hospital of this size, not all the cases came under one method of treatment. In this series of seventy-four cases it was fortunately so, because it enabled us to compare the results of the different methods adopted. Sixty-four of the patients were treated with the method we recommend, which we shall indicate as the bismuth-milk-saline method of treatment. Two of these patients had not made satisfactory progress on the fifth and twelfth days respectively, and cecostomy was performed.

In this series of sixty-four cases there was one death, that of a United States citizen of German birth, admitted March 7, 1910, with a double tertian malarial infection in addition to the amebic dysentery. His temperature on admission was 102. His urine contained hyaline casts, renal epithelium, pus and albumin, evidences of a severe nephritis. His stool, with the entamebas, pus, blood, etc., had also flagellates. The temperature reached normal on the second day after the admission of the patient, remaining so on the third and fourth, and the patient died on the fifth day with a temperature of 104. Unfortunately there was no necropsy, but the clinical course of the disease was not that of a straight amebic dysentery, and the complications of a severe diffuse nephritis with a double tertian infection contributed to, if they were not responsible for, the fatal termination.

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Leaving this case out of consideration we had 100 per cent. of recoveries.

Of the remaining ten patients of this series one was treated with quinin irrigations (1:1,000) in September, 1909, and returned with multiple liver abscesses the following January. Another patient was treated with quinin irrigations, 1:2,000, and bismuth subgallate, 10 grains, with opium by mouth for seventeen days. He was admitted September 23, and returned November 6 of the same year. He was then given the treatment we recommend, and has not since come back. One patient was not dieted, but took large doses of bismuth at irregular intervals. He relapsed and was later admitted to Colon Hospital. Two other patients died on the day of admission, and received no other treatment but stimulation. One patient died of general peritonitis from an unrecognized liver abscess which ruptured on the under surface of the left lobe; another of a pernicious estivo-autumnal malaria within forty-eight hours of admission, and a third of multiple liver abscess, complicated by chronic nephritis, one week after admission. This patient was operated on and a large abscess drained.

This leaves two patients to be accounted for. One, a Panamanian, died on the eleventh day after admission with a complicating disseminated tuberculosis, secondary to ulcerative pulmonary lesions. The cause of death in this case can scarcely be attributed to amebic dysentery. The last fatal case to be considered in this series was a Martiniquan, admitted May 3, 1910. He was treated for ten days by the bismuth-milk-saline method, but not improving, a cecostomy was performed, and he died the next day. The necropsy findings were emaciation, suppurative conjunctivitis, chronic aortitis, chronic adhesive pleuritis, acute splenic tumor, cloudy swelling of the kidneys and liver, and acute and chronic colitis (chronic amebic and acute healing processes). The interesting feature about this case is that notwithstanding the patient's emaciated condition on admission and his lowered powers of resistance, the necropsy revealed, on the twelfth day after admission and following the bismuth-milk-saline method of treatment, acute and chronic healing ulcers from which "smears failed to show entamebas."

If, then, we leave out of consideration the two patients who died within twenty-four hours after their admission, the patient who died from tuberculosis—this was a complicated case—and the two who died from liver abscess and pernicious malaria, we have treated in the last two and one-half years fifty-five cases with one death, a mortality-rate of 1.8 per cent.

That amebic ulcers do heal under this method of treatment we have ample evidence to prove. Dr. H. T. Clark informs us that at autopsy in three of the cases in which the dysenteric process was complicated by other diseases, but was treated by this method, two of them having had cecostomy as well, active pink granulations were found, running out from all the islets and strands of the mucosa not destroyed, which in some cases quite filled the ulcer.

CASE REPORT

M. C., Hospital No. 86,158, Jamaican negro, was admitted Oct. 11, 1910, with typical amebic dysentery, and a subnormal temperature which did not rise above normal until the fifth day. He was treated by the bismuth-milk-saline method, with a disappearance of the dysentery on the eleventh day. On the fifth day, however, his temperature began to increase and to intermit, and he died Jan. 21, 1911, with a general disseminated tuberculosis and chronic nephritis. The interesting feature of this case is that the necropsy revealed a great number of cicatrices throughout the cecum and rectum of the healed amebic type. This was an instance of cure of amebic dysentery, in the presence of developing fatal tuberculosis and chronic nephritis, and it is not a solitary example of its kind. These healed cicatrices are stellate, pigmented, somewhat depressed, and contain a lace-like collection of arterioles, according to Dr. Clark, and the healed mucosa seems to functionate.

It was stated in my previous paper[1] that the appendix is frequently involved, and this is the only organ in which Dr. Clark has been able to find amebas at the necropsies in most of the cases treated with bismuth. This is interesting because the appendix is almost inaccessible to the bowel contents, which come into it from the cecum. As the cecum is very frequently involved, so is the appendix. The cecum, however, is more accessible to treatment and heals before the appendix does, for in the latter the putrefactive bacteria can subsist only as long as suitable pabulum is provided for them from the cecum. When this is rendered antiseptic and the appendix is not further supplied, then the bacteria must die, with consequent death of the entamebas.

In twelve of the twenty cases necropsied by Dr. Clark, liver abscesses, single or multiple, complicated the dysentery. This complication is a very serious one, particularly if the abscess be of the acute fulminating type, in which case the disease generally runs a rapidly fatal course.

I have demonstrated that amebic ulcerations do heal by the bismuth-milk-saline method of treatment even under the most adverse complicating conditions; now what about relapses? In order to ascertain as far as possible the number of relapses that have occurred in Ancon Hospital, we have examined carefully the records of our 282 cases as to the number of admissions and the kind of illnesses subsequent to the admissions for amebic dysentery. We have been able to trace the records of only forty-six such patients. Some have undoubtedly left the Isthmus, and some have been admitted to other hospitals. Of these forty-six patients with one or more subsequent visits to the hospital twenty-nine were treated by the bismuth-milk-saline method, and we find that not one recurrence followed—in other words, 100 per cent. of perfect recoveries. Of these, one patient had been previously treated with quinin irrigations.

Of those who had been treated by other methods in vogue here, such as irrigations of different kinds, bismuth subnitrate in small doses, with or without opiates, opiates alone, bismuth subgallate, ipecac, etc., there were seventeen readmissions; of these patients ten, or 59 per cent., relapsed once or twice. This is eloquent testimony for the efficacy of the bismuth-milk-saline method of treatment. All of these forty-six patients had from one to eight subsequent admissions, and in almost all instances the stools were examined by routine at every admission. Those considered as cured gave in subsequent admission no history of having had dysenteric or diarrheal symptoms following their treatment.

What evidence have we as to the development of liver abscesses after treatment by the bismuth-milk-saline method? Eighty patients with liver abscess have been admitted to this hospital. In but one case was this method of treatment administered, at a previous hospital admission, and that for three days only. We have every reason to feel, therefore, from clinical experience and pathologic evidence, that, if the treatment be carried out as I have detailed above, we can anticipate perfect cures, no relapses and no metastatic abscesses. This holds good for acute as well as for chronic cases. Our

statistics show that those who sought hospital relief early, after the onset of the disease, were those most quickly cured; still, chronicity is not a hopeless or deterrent factor, and relief quickly follows treatment. We have admitted patients with chronic cases which were contracted in the United States, Brazil and the Philippines. These patients had resisted treatment for years, but recovered promptly under the bismuth-milk-saline method of treatment. One patient had been under treatment for eleven years, during which time formed stools had been passed for six days only. Twelve days' treatment in the hospital and about a month outside with reasonable diet precautions effected a perfect result.

It has been stated above that the *Entamoeba histolytica* is symbiotic, or associated with some other organism in its life-history; further, that metastatic abscesses are frequently found in the liver, and occasionally in the lungs and brain. In the latter two situations, they are generally found secondary to those in the liver and are secondarily infected, thus having associated bacteria to elaborate their nutriment.

We need then consider only those abscesses which develop in the liver and which for the most part are sterile, showing no evidence of symbiosis. In explanation of this it may be said that symbiosis means that the elaboration of metabolic products by the one is necessary to form suitable pabulum for the other organism.

The liver is the great metabolic gland of the body, where the absorbed products from the gastro-intestinal tract in the portal circulation are elaborated. It is more than probable that this medium is all that is necessary to form suitable nourishment for the entamebas when they have gained access to it through the portal circulation. It has been suggested that the entamebas carry their symbiotic organisms with them when they form metastases. If this is true, then cultures ought not to be so frequently sterile. The abscesses are the result for the most part of necrosis of liver tissue through the action of the *Entamoeba histolytica* which appears to have the action of an enzyme on the tissues. We have seen two cases here in which enormous sloughs slowly developed from an initial liver abscess. All the tissues melted before the process and no measures seemed to stay its course.

I believe that the frequency of liver abscess and its comparative absence in other organs, except when secondarily infected, can be best explained on this theory, that in the liver the cell metabolism elaborates a medium suitable for the development of the entamebas which in the intestines require symbiotic or associated organisms.

I have, in conclusion, not only shown results, but have given a reasonable physiologic explanation of them, and am willing to submit my results to other workers for criticism or trial. No matter what may be said, the conclusions here arrived at are drawn from, and rest on, the analysis of case records.

SUMMARY

1. Amebicidal irrigations are useless.

2. The bismuth-milk-saline method of treatment gives, in almost all cases, a perfect result, if the lines indicated for its administration are adhered to.

3. This method of treatment gives a maximum of cures with a minimum of recurrences and metastatic developments, the most frequent of which is liver abscess. This offers a serious complication in the treatment, particularly if of the acute or fulminating type.

4. Occasionally, in extreme cases, surgical interference, after Dr. A. B. Herrick's method, is indicated.

A NOTE ON THE CULTIVATION OF MALARIAL PLASMODIA AFTER THE METHOD OF BASS AND JOHNS*

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Shortly after the publication of the paper by Bass and Johns[1] on the cultivation of malarial plasmodia, preparation was made to try their method. Cases of malarial fever, which a little earlier in the season had been quite frequent in our wards, were at this time rather rare; but in the course of the following three weeks or so three cases were admitted. Two of these were estivo-autumnal and one was a quartan.

The technic outlined by Bass and Johns was adhered to closely, and no essential deviation was made from their description. In two of the cases the attempt was made to cultivate the second generation. In doing this use was made of only one of the methods given by Bass and Johns. This method was by the test-tube fitted with the little shelf of paper supported by a piece of glass rod, as described in their paper.

In the first case, at the time blood was drawn, smears from the punctured ear showed a rather heavy infection of *Plasmodium falciparum*, small ring forms. This culture was made in the late afternoon. The next morning many larger, pigmented forms were observed. The culture was returned to the incubator, but on later examination it was evident that growth had ceased. I think it very likely that this culture was killed by undue tilting of the tube in handling. The parasites, according to Bass and Johns, grow only in the superficial layer of blood-cells, and if the tube is tilted and this top layer disturbed it results in death of the parasites.

In the second case, at the time blood was drawn, smears from the ear showed a light infection of *P. malariae*. Indeed, the parasites were quite scanty, only half a dozen being found in a twenty minutes' search of a well-stained slide. The culture from this case was not successful.

The third case was another heavy infection of *P. falciparum*. All forms seen in the smear from the ear, at the time blood was drawn, were small rings; none was pigmented. In this case, as in the second, the attempt was made to grow the first as well as the second generation. That is, the blood was drawn, mixed with the dextrose solution, defibrinated, and centrifugated to get off the serum and to eliminate leukocytes in the tube for the second generation. The tube with the little paper shelf was then prepared, and the original tube, which still had a layer of a scant half inch of serum over the red cells, was preserved also. Both were put at 40 C. In this case the parasites grew readily in both tubes and went on to sporulation, but for some reason the merozoites did not enter fresh blood-cells, and of course growth ceased. All conditions seemed favorable and this result was a disappointment.

This successful culture was made from a case of very persistent infection, which had been under treatment in our wards for some time. At the time the culture was made the patient was suffering from a fresh outbreak.

No attempt was made to differentiate varieties, but the parasites developed into large forms and rosettes

* From the Laboratory of the United States Marine Hospital at Savannah, Ga.

1. Bass and Johns: Jour. Exper. Med., 1912, xvi, 567.

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in something over thirty hours. The sporulation was not uniform and continued to take place for some time. Motility was observed in the pigment granules, but ameboid movement in the parasites was not so prominent. In the tube from which the leukocytes had not been removed (original tube), phagocytosis of the rosette forms was occasionally observed. This, as Bass and Johns state, probably occurs after the parasite has digested the capsule of the red cell or otherwise damaged it, since leukocytes will not attack parasites in an uninjured red cell.

With the Leishman stain I succeeded in staining the parasites readily when the first rosettes developed, but later for some reason I was not successful. As Bass has said, it is only necessary to see such a stained slide to feel convinced of the growth of the parasites *in vitro*, for such pictures are not observed in the peripheral blood of cases of malaria.

This brief note is made only in confirmation of the beautiful results of Bass and Johns. It is regrettable that further trials could not be made, but the cases have not been available; and it is rather late in the season now to expect them.

Bass and Johns have made a notable contribution to the study of malaria, and their paper is an extremely interesting and suggestive one on several phases of this disease. A full account of their important work will be awaited with much interest.

PARALYSIS AGITANS IN NEGROES *

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Paralysis agitans is rare in negroes. The patient whose case is here reported was the only negro among the ninety-two persons suffering from it admitted to the Philadelphia General Hospital (Blockley) during the last eight years. I find no case recorded at the Orthopedic Hospital and Infirmary for Nervous Diseases. The number of negroes treated at the latter hospital, however, is relatively small; at Blockley it is large. Dr. James W. McConnell tells me that at the clinic for nervous diseases at the University of Pennsylvania he has not found any case recorded save the patient who later came under my care at Blockley. I have never seen any other case, and in a rapid glance over the literature of the disease I have found no reference to its occurrence in the negro.

Patient.—A negro man aged 52 was admitted to the hospital June 3, 1912. His parents were black but he does not know whether any of his forebears were white. He denies syphilis, and presents no evidence of it, but admits alcoholic excess. He states that his present illness began four years ago with numbness in the right foot which slowly extended to the leg and later appeared in the other leg and hands. At the same time all his voluntary movements began to be slow, but at no time did he notice any marked tremor. He has had an intercurrent attack of general cardiac edema. During the last few months he has grown much weaker not only because of his heart trouble but locally in the arms and legs. His legs become so stiff at night that he has trouble in turning in bed, though the desire for change of position is great. He often feels hot after being in bed a short time. There is no loss of control of the bladder or rectum.

Examination.—As he sits he presents the typical appearance of paralysis agitans barring tremor—the vacant stare, the head and shoulders somewhat flexed, the fingers and thumbs in the position of holding a pen. He rises with difficulty and slowly, stands a few moments, then starts off to walk with short, shuffling steps, scarcely raising the soles from the ground, then takes larger and quicker steps and soon begins to run (festination). He must be aided in starting to walk and then can go alone. His articulation is stammering and tremulous; after he has spoken a few sentences, his speech often becomes so hurried that he cannot be understood (festination in speech). While at rest, tremor is wholly, or almost wholly, absent from the entire body. Under the influence of emotion a fine tremor develops in the hands, and when talking very rapidly some appears in the lips. The tongue is never tremulous. The knee-jerks are normal. The irides react to light and with accommodation, and the optic nerve-heads are normal. There is no nystagmus. The patient presents no signs of mental disorder. He is not of a high mental type, but there is neither imbecility nor dementia. He believes in ghosts and spirits, but has never seen or talked with any, and I am quite sure that these beliefs are racial and environmental, not pathologic. Voluntary movements of the arms are slow and weak and of the legs still slower, weaker and stiff, but there is no true palsy. Sensibility is normal over the entire body. The arteries are palpably sclerosed, and the arterial tension is high. The heart is somewhat hypertrophied and there is a loud booming mitral systolic murmur. The second aortic sound is accentuated. The abdominal organs are normal except for chronic nephritis.

Diagnosis.—Notwithstanding the absence of the characteristic tremor, the case is clearly one of paralysis agitans. Whether tremor was present earlier in his illness is impossible to discover because the patient's intelligence is not high enough, or his memory good enough, for him to give an accurate account of his early symptoms.

We know a great deal, or rather are learning a great deal, clinically about the racial incidence of disease. We know little of the causes of racial differences in susceptibility to disease. Certainly in some diseases of known mycotic origin there arises a greater or less immunity after many generations of a given race have been infected. On the other hand, an apparent racial immunity may be not racial but due to the absence of the cause of the disease. Thus until recently Irishmen in Ireland rarely had paresis, though in this country it has always been quite common among them. This apparent immunity was probably not racial but due to the infrequency of syphilis in Ireland and to the absence of the stress of life (for after all life is not so strenuous in Ireland as here) and to the frequent breaking down of all restraint when the young immigrant comes to this country. The havoc that any infectious disease appearing for the first time in a primitive race plays is well known.

To go back to the negro, Dr. Weir Mitchell showed years ago that St. Vitus' dance is very rare among negroes. In a study of locomotor ataxia made some years ago I found, as later writers have verified, that it also is rare. This is remarkable because syphilis, which surely is the great predisposing cause of tabes, is wofully frequent in American negroes, and cerebrospinal syphilis is fully as common in them as in the whites. Paresis, the first cousin if not the brother of tabes, is rapidly becoming as common in negroes who have an admixture of white blood as it is in Caucasians, though in real negroes it is almost unknown. Tabes also is occasionally seen in half-breeds.

I am entirely unable to give any reason for the rarity of paralysis agitans in negroes. It would seem that it does not altogether depend on a more sensitive, that is, a more finely balanced, nervous system in Caucasians, because in them it is not the most highly strung who are

* Read at the October, 1912, meeting of the Philadelphia Neurological Society.

prone to the disease. Though the shock of fright is occasionally the exciting cause, it occurs most frequently in persons with good emotional and intellectual equilibrium and not so often in those who do not have good inhibition. The neurasthenic type of man is not prone to be affected. In fact, it is not proved beyond all doubt that paralysis agitans is primarily a nervous disease; it may really be muscular in origin, and the rarity of its occurrence in negroes may be due to racial differences in muscular development rather than to differences in the nature of the cells of the nervous system.

Concerning the large question of nervous diseases in negroes, I think that we have enough data to warrant the following generalizations:

1. Barring epilepsy, the so-called functional nervous diseases, that is, those nervous diseases which do not have a plainly manifested and generally accepted morbid anatomy (one can surely include paralysis agitans in this group) are much less frequent in negroes than in Caucasians.

2. The gross nervous syphilitic diseases, which after all are really vascular and not primarily nervous disorders, are common, while the so-called parasyphilitic diseases are very rare.

3. Idiopathic epilepsy is as common in negroes as in whites.

4. Certain disorders occur in negroes of mixed blood which are never seen in the pure black.

1918 Spruce Street.

HEMOPHILIA TREATED BY HUMAN BLOOD-SERUM

A. H. TRAVER, M.D., ALBANY, N. Y.

In view of the fact that several cases of hemophilia were reported recently in THE JOURNAL,[1] I though a brief report of the following case might be of interest as it so clearly demonstrates the value of human blood-serum.

In April I was called to see a boy aged 5, in whose family there was a clear history of "bleeders," three of his mother's brothers having died of hemorrhage. Soon after this boy was born it was noticed that even after the slightest injuries he frequently had large black-and-blue spots. He has had several attacks of swelling of the ankles and knees said to have been "rheumatism," but probably hemorrhages into the joints.

Five days before I was called, while cutting an apple he had received a slight cut on the finger. This had been bleeding constantly since. After much trouble this hemorrhage was stopped by the application of tannic acid together with about twenty minutes' constant pressure applied by my assistant, Dr. Pitts, and myself.

In September he had his next severe hemorrhage. This time he caught his tongue between his teeth and received a slight cut. Dr. Shaw of Albany had treated the case for six days. He had tried about all the known remedies, as tannic acid, epinephrin and several injections of horse-serum, without effect. When I saw the patient on the sixth day, with Dr. Shaw, the child was very pale; his pulse could barely be felt and he was unable to sit up in bed; in fact, the case looked pretty hopeless. As the only thing left to be tried was human serum I suggested that. After carefully preparing the father's arm I opened the median basilic vein and filled an 8-ounce sterile bottle with blood. This bottle was placed in an ice-box for ten hours. Then 20 c.c. of the serum were injected subcutaneously into the child's buttocks. Within twenty minutes there was a firm clot forming on the tongue. Previously there had been no tendency toward clotting. This clot gradually grew larger for twelve hours. As it was becoming so large that it was difficult for the child to close his mouth, the clot was removed. It was feared that hemorrhage would start on removing the clot, but in this we were happily disappointed. I gave a second injection eight hours later and a third sixteen hours later as a measure of precaution, but it did not appear necessary as there was but slight bleeding after the first injection.

The child has had no injury since September, so it remains to be seen if hemorrhage is troublesome in the next accident.

It was interesting to watch the clot form within a few minutes after the injection, while there was no tendency toward clotting before. I think the injection of the human blood-serum saved this patient's life, as nothing else seemed to have the least effect.

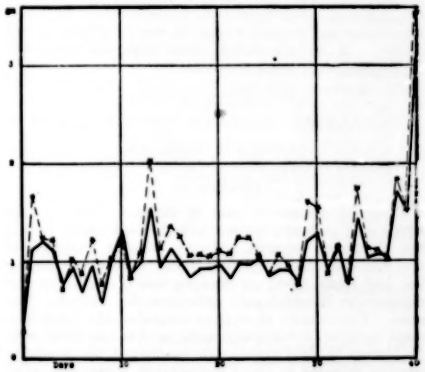
27 Eagle Street.

1. Barringer, B. S.: Unilateral Kidney Hemorrhage Controlled by Injection of Human Blood-Serum, THE JOURNAL A. M. A., Oct. 26, 1912, p. 1538. Reichard, V. M.: Spontaneous Hemorrhage of the New-Born with Recovery, ibid., p. 1539. Perkins, M. J.: Diphtheritic Serum Used to Control Bleeding in a Hemophiliac, ibid., p. 1539. Claybrook, J. E.: A Case of Hemophilia, ibid., p. 1540. Blood-Serum in Hemophilia, editorial, ibid., p. 1549.

THE RUHEMANN URICOMETER FOR URIC ACID ESTIMATION *

H. C. BRADLEY, PH.D., AND E. BUNTA, MADISON, WIS.

A critical examination of the Ruhemann method for the clinical estimation of uric acid was undertaken in this laboratory, and the results may be of interest to clinicians. The



Fluctuations in uric acid output as measured by the Ruhemann uricometer and by the Folin method. The solid line represents the Folin figures; the line composed of dashes, the uricometer figures.

urine of a single individual was examined for a period of forty days. The dietary was so arranged that the first estimations were made after a purin-free period and represent therefore the individual's endogenous uric acid excretion. There followed periods of mixed and vegetarian diets, with and without violent exercise, with and without excessive fluid ingested. The test concluded with a period of purin-rich diet, pushed to the extreme during the last twenty-four hours, so that the subject attained the extraordinary excretion of 3 gm. per day. The accompanying chart represents the fluctuations in uric acid output as measured by the uricometer and by the standard method of Folin. The former requires about ten minutes and no special equipment beyond the empirically graduated tube and the special iodin solution; as is well known, the latter requires twelve hours to complete a determination; a number of special solutions, and good technic. The latter is seldom used clinically except in hospitals well equipped with chemical laboratories and trained technicians. The former could readily be applied by the average practitioner.

As will be seen, the two methods show a fair degree of parallelism. The uricometer tends to give abnormally high

* From the Department of Physiology, University of Wisconsin.

readings, especially as the absolute amount of the uric acid increases. It may exceed the absolute figure by as much as 30 per cent. Its inaccuracies are therefore large and progressively so as the level of excretion rises. This may be due to inherent inaccuracies of the method, such as incorrect empiric graduation of the tube, or to the presence in the urine of other substances which absorb iodin. The purin bases, albumin, diacetic acid and various drugs may be instanced. In pathologic conditions the possibility of error from this source is of course great.

In general, then, the uricometer method of estimating uric acid is accurate within reasonable limits so long as the amount indicated is low, and the lower the level of uric acid metabolism registered by the method, the greater the presumption of accuracy. Thus at a level of 0.3 gm. per day the probable errors will not exceed 10 or 15 per cent.; above 1 gm. no limit can safely be put on the degree of error in pathologic cases. Knowing these inherent inaccuracies, the clinician who is unable to make the long Folin determination might still apply the Ruhemann uricometer with advantage when it is desirable to define the general uric acid metabolism of the patient. If the level is low it will be well indicated by this method.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

CALCIUM GLYCEROPHOSPHATE.—Calcii Glycerophosphas. Calcium glycerophosphate is monohydrated calcium glycerophosphate $Ca(CH_2OH.CHOH.CH_2)PO_4.H_2O$ the normal calcium salt of glycerophosphoric acid, $H_2(CH_2OH.CHOH.CH_2)PO_4$, containing not less than 90 per cent. of anhydrous normal calcium glycerophosphate.

Calcium glycerophosphate is a fine white powder, odorless and almost tasteless; somewhat hygroscopic.

It is slightly (about 1-400) soluble in water; almost insoluble in boiling water; easily soluble in dilute acids; insoluble in alcohol or in ether.

The aqueous solution is alkaline to red litmus paper. A cold, saturated, aqueous solution yields white, iridescent scales when heated to boiling (anhydrous calcium glycerophosphate).

At about 130° C. (266° F.) calcium glycerophosphate loses its water of hydration. When heated above 170° C. (338° F.) the salt is decomposed with evolution of inflammable vapors, and at a red heat it is converted into calcium pyrophosphate.

On the addition of ammonium oxalate solution, the aqueous solution yields a white precipitate, insoluble in acetic acid or in a solution of citric acid, but soluble in hydrochloric acid. With lead acetate solution the aqueous solution yields a white precipitate which is soluble in nitric acid.

If 1 Gm. of calcium glycerophosphate be dissolved in 10 Cc. of diluted nitric acid and an equal volume of ammonium molybdate test solution be added, no precipitate should be formed within one hour.

If 1 Gm. of calcium glycerophosphate be dissolved in 100 Cc. of 1 per cent. hydrochloric acid, the solution should not respond to the U. S. P. time-limit test for heavy metals.

If 0.1 Gm. of calcium glycerophosphate be dissolved in 10 Cc. of diluted nitric acid and 1 Cc. of silver nitrate solution added, not more than a distinct opalescence should appear within one minute.

If 0.1 Gm. of calcium glycerophosphate be dissolved in 10 Cc. of diluted hydrochloric acid and 1 Cc. of barium chloride solution added, no distinct turbidity should appear within one minute.

If 1 Gm. of calcium glycerophosphate in water be titrated with tenth-normal potassium hydroxide, using phenolphthalein as indicator, not more than 1.5 Cc. of the alkali should be required.

If 1 Gm. of the finely powdered salt be shaken with 25 Cc. of alcohol, the mixture filtered, the filtrate evaporated on the water bath and the residue dried for one hour at a temperature not exceeding 70° C. (158° F.), the residue should weigh not more than 0.01 Gm.

If from 0.5 Gm. to 1 Gm. of the finely powdered salt be dried to constant weight at 150° C. (266° F.), the loss should not exceed 10 per cent.

If from 0.3 Gm. to 0.5 Gm. of anhydrous calcium glycerophosphate be weighed into a Kjeldahl flask, 10 Cc. of a mixture of equal parts of fuming nitric acid and concentrated sulphuric acid added, the mixture heated until oxidation is complete, a little more fuming nitric acid being added if necessary, the solution diluted with 50 Cc. of water and the phosphorus determined in the usual way, by precipitation with ammonium molybdate and final weighing as magnesium pyrophosphate, the weight should correspond to from 14.16 per cent. to 14.75 per cent. of phosphorus.

If from 0.3 Gm. to 0.5 Gm. of anhydrous calcium glycerophosphate be dissolved in 20 Cc. of a 5 per cent. solution of citric acid, 80 Cc. of water added, the calcium precipitated as oxalate in the usual way and weighed as calcium oxide, the calcium oxide should correspond to from 18.7 per cent. to 19.8 per cent. of calcium.

Actions and Uses.—Glycerophosphates were introduced as "nerve foods" and tonics on the theory that their phosphorus, being a step nearer lecithin, is assimilated more readily than that of hypophosphites. Neither the experimental nor the clinical evidence is considered conclusive by all authorities. Recent animal experiments indicate that glycerophosphates possess no advantages over inorganic phosphates in phosphorus metabolism.

Dosage.—0.2 to 0.65 Gm. (3 to 10 grains) in powders, wafers, capsules or tablets, suspended in water or syrup, or dissolved by the addition of sufficient citric acid or diluted hydrochloric acid.

Non-Proprietary Preparation:

Calcium glycerophosphate, Monsanto.—Manufactured by the Monsanto Chemical Works, St. Louis, Mo.

SERUM ANTIDIPHTHERICUM AND ANTIDIPHTHERIC GLOBULINS (See New and Nonofficial Remedies, 1912, p. 201).

Slee Laboratories, Swiftwater, Pa. (The Abbott Alkaloidal Co., Chicago).

Slee's Refined and Concentrated Diphtheria Antitoxin.—Diphtheria Antitoxin (Slee's concentrated), prepared according to Banzhaf's method and preserved in 0.25 per cent. trikresol, contains less than 20 per cent. of solids. It is supplied in packages containing 1,000, 2,000, 3,000, 4,000 and 5,000 units, in vials and also in syringes.

PHARMACEUTICAL PREPARATION ACCEPTED FOR N. N. R.

The following dosage form of an accepted proprietary article has been accepted for N. N. R.:

Vacules Cornutol.—Each vacule contains Cornutol 30 Cc. (1 fluidounce) in sealed ampoules. The air in the container is removed before sealing, whereby, it is claimed, deterioration of Cornutol is retarded.

Therapeutics

DISTURBANCES OF THE HEART

TREATMENT OF BROKEN COMPENSATION

(Continued from Vol. LIX, page 2347)

E. MEDICATION (CONTINUED)

2. *Cardiac Stimulants.*—A cardiac stimulant is a drug that makes the heart beat more strongly and the frequency becomes more nearly normal. The drugs named as cardiac stimulants, however, camphor, alcohol and ammonia, do not leave a heart better than they found it—they are not cardiac tonics.

Camphor: This is one of the best cardiac stimulants that we possess. It is a quickly acting nervous and circulatory stimulant, acting principally on the cerebrum and causing a dilatation of the peripheral blood-vessels. No subsequent weakness follows after a dose of camphor. Too much will make a patient wakeful, a little often quiets nervous irritability. It should

be used as a cardiac stimulant during serious illness more frequently than it has been, and during the endeavor to make a non-compensating heart again compensatory camphor will often act for good. The dose is 2 teaspoonfuls of the camphor-water every three or four hours, as deemed advisable. Each teaspoonful represents a little more than ¼ grain of camphor. The spirits of camphor of course may be used, if preferred.

For cardiac emergencies ampules of sterile saturated solutions in oil are now obtainable and are valuable. Such hypodermatic stimulation acts quickly, and may be repeated every half hour for several times, if the patient does not respond. The solution should be injected slowly, and as a rule intramuscularly.

Many times while other measures are being used to repair a broken compensation, camphor makes a splendid circulatory and nervous bracer. Camphor has long been used as a so-called antispasmodic in hysteric or other nervously irritable persons. It really acts as a stimulant to the higher centers of the brain, promoting more or less nervous control. Perhaps its ability to increase the peripheral circulation may be one of the reasons that it seems at times to be almost a nervous sedative by relieving internal congestion. As just stated, after the camphor action is over there is no depression. This is not true of alcohol.

Alcohol: It is of course now generally understood that alcohol is not a cardiac stimulant in the sense of its being more than momentarily helpful to a weak heart. If alcohol is pushed when a heart is in trouble, the secondary vasodilatation and more or less nerve prostration and muscle debility will cause greater circulatory weakness than before it was administered. To obtain cardiac stimulation from alcohol it must be given in strong solutions, generally in the form of whisky or brandy, for local irritation of the mouth, esophagus and stomach; reflexly the heart is stimulated and the blood-pressure rises. As soon as complete absorption has taken place the blood-pressure falls. For continuous stimulation another dose of alcohol must be given before this depression occurs. This may be in from one to three hours. To continue such stimulation the dose of alcohol must be increased. The future of such treatment means an alcoholic sleep with depression, alcoholic excitement that is not desired, or profound nausea and vomiting, with peripheral relaxation and cold perspiration. Obviously none of these conditions is desirable; but in arteriosclerosis, or when the blood pressure is high and the heart labors under the disadvantage of contracting against an abnormal circulatory resistance, alcohol may act perfectly to relieve this kind of circulatory disturbance. In this condition the alcohol should not be given concentrated, and as soon as it is thoroughly absorbed vasodilatation occurs, peripheral circulation and therefore warmth is increased, and the heart is relieved of its extra load. In such instances, in proper doses not too frequently repeated, rarely more than 1 or 2 teaspoonfuls every three hours, alcohol is a valuable drug. Such good action of alcohol is often seen when the surface of the body is cold from chilling or the extremities are cold from vasomotor spasm. A good-sized dose of alcohol, best given hot, equalizes the circulation and acts for good. On the contrary, it is obvious that, if the patient is cold from collapse and there is cold perspiration and very low blood-pressure, alcohol is not the drug indicated, although one dose may be of benefit while other more slowly acting cardiac tonics or stimulants are being administered.

During serious prolonged illness and when the patient has not had sufficient food and is not taking sufficient food, alcohol in the form of whisky or brandy, not more than a teaspoonful every three hours, acts as a necessary food, and will more or less prevent acidosis from starvation.

It will be seen that alcohol, except possibly in a single dose occasionally, or for some special reason, is rarely indicated in broken compensation.

When alcohol is administered regularly, whether during a fever process or for any other reason, if it causes a dry tongue, cerebral excitement, flushed face and a bounding pulse, or if there is the odor of alcohol on the breath, the dose is too large, and alcohol is contraindicated.

Ammonia: In the form of ammonium carbonate or the aromatic spirits of ammonia this has long been used with clinical satisfaction as a cardiac stimulant. Probably, however, it is seldom wise to use ammonium carbonate. It is exceedingly irritant, and constantly causes nausea, perhaps vomiting, and often heart-burn or other gastric disturbance. It has no value over the pleasanter aromatic spirits of ammonia, which is essentially a solution of ammonium carbonate. The dose of the aromatic spirits is anywhere from a few drops to half a teaspoonful, given with plenty of water. It is a quickly acting stimulant, with an effect much like alcohol, followed by very little or no depression. It is more of a cerebral irritant than alcohol, and probably has but few, if any, advantages over camphor.

When but little nutriment has been taken for some days, it may be a chemical question, since ammonium compounds so readily form and become cerebral irritants, whether any more ammonium radicals should be given the patient. This is especially true with defective kidneys. In these conditions camphor is better.

To continue the action of ammonia it may be given every hour for several doses and then less frequently.

3. *Vasodilators.*—In various conditions of high blood-pressure, arteriosclerosis and even during the sthenic stage of a fever, vasodilators may be indicated. The most important are nitrites, iodids and thyroid extracts. Alcohol, as above stated, may act as a vasodilator. Aconite and veratrum viride are now rarely indicated, although possibly aconite should be used when there is high tension and the heart is acting irritably and stormily.

Of the nitrites, no preparation seems to act more satisfactorily than nitroglycerin (trinitrin, glyceryl, nitratis, glonoin). Its action may not be so prolonged as other forms of nitrite such as sodium nitrite or erythrol tetranitrate, but it is not irritant, and only a little less rapid than nitrite of amyl, and although the marked dilatation lasts but a short time, often apparently only for minutes, still, when frequently repeated or given a few times (from four to six) in twenty-four hours, it frequently keeps the blood-pressure lower than it would be without the drug. In diseases of the heart the sudden vasodilatation caused by amyl nitrite inhalations is indicated only in angina pectoris. When the surface of the body tends to be cold, however, when the peripheral blood-pressure is increased and the heart is laboring, nitroglycerin in small doses is valuable. The dose may be from 1/400 to 1/100 grain, dissolved on the tongue or given hypodermatically for quick action, or given by the mouth for more prolonged action. In sudden cardiac dyspnea nitroglycerin sometimes acts specifically, especially when there is asthma. When a drop

or two of the official spirits, which is a 1 per cent. solution, is given on the tongue, or a soluble tablet of 1/100 grain is dissolved on the tongue, the action is almost as rapid as though the dose had been administered hypodermatically. Many times when such increased peripheral circulation is desired and alcohol seems indicated, nitroglycerin in small doses will act as well. It cannot be termed a cardiac stimulant, although many times a heart acts better and the pulse is fuller and stronger after nitroglycerin than before. It should not be used, except if specially indicated, in broken compensation or in other myocardial weakness.

Iodids: These have no immediate action. The vasorelaxation that often occurs from iodid is quite likely due to the stimulation of the thyroid gland by the iodin, and the thyroid gland secrets a vasodilating substance. Small doses of iodid, however, when indicated in various kinds of sclerosis, have seemed to lower blood-pressure. While large doses may have more of this action, they are not now under consideration, and large doses are rarely indicated. Too much iodid has been given for many conditions. If the indications for an iodid are present, such as sclerosis anywhere, or unabsorbed inflammatory products, exudation in or around the heart, or an apparent insufficiency of the thyroid, from 0.1 to 0.2 gm. (1½ to 3 grains) once or twice in twenty-four hours, after meals, is all that is required to give the action desired, and the circulation is benefited. It is sometimes a question whether small doses of iodid are not actually stimulant to the heart, possibly through the action on the thyroid gland.

Thyroid Extract: In slow hearts and in sluggish circulation, often in old age, quite frequently in arteriosclerosis and in every condition of insufficient thyroid secretion (these instances are frequent), small doses of thyroid extract will benefit the circulation. Its satisfactory action is to increase the cardiac activity, slightly lower the blood-pressure, and increase the peripheral circulation and the health of the skin. If it causes tachycardia, nervous excitement, sleeplessness or loss of weight, it is doing harm and the dose is too large, or it is not indicated. The dose for the cardiac action desired is 2 or 3 grains once a day, continued for a long period.

When an improved peripheral circulation is desired, and especially when a reduction of the pressure in the heart is desired and a diminished amount of blood in overfilled arteries is indicated, the value of the sitz-bath, hot foot-baths, warm liquids (not hot) in the stomach, and warm, moist applications to the abdomen should all be remembered.

4. *Cardiac Nutritives.*—Iron: Nothing is of more value to a weakened heart muscle, when the nutrition is low, the patient anemic, and the iron of the food not properly metabolized, than tonic doses of some iron salt. It has frequently been repeated, but should constantly be reiterated, that there is no physiologic reason or therapeutic excuse for the patient to pay a large amount of money for some organic iron preparation. Small doses of an inorganic salt act perfectly, and nothing will act better. As previously suggested, a drop or two of the tincture of iron, a grain or two of the reduced iron, or 2 or 3 grains of the saccharated oxid of iron, given once or twice in twenty-four hours, is all the iron the body needs from the points of view of the blood and the heart.

Calcium: It has lately been learned that calcium is an element that a heart needs for perfect activity. Many patients who are ill lose their calcium, and they may not receive a sufficient amount of it unless milk is given them. Even if such patients are taking milk, a heart and the whole general condition sometimes seem to improve when calcium is added to the diet. It may be given either in the form of lime-water, calcium lactate or calcium glycerophosphate. If a medium-sized dose is given three or four times in twenty-four hours, it is sufficient and will often act for good.

Whether calcium can do harm in a chronic endocarditis or an arteriosclerosis to offset the value that it seems to have in quieting the nervous system and in being of value to a weak or nervously irritable heart is a question that has not been decided. Theoretically lime should not be given when there is a tendency to calcification, or when a patient is past middle age. Lime seems to be essential to youth, and to the welfare of nervous patients.

5. *Cardiac Emergency Drugs.*—Besides some of the drugs already mentioned (such as camphor hypodermatically, nitroglycerin when indicated, strophanthin hypodermatically or intravenously, caffein and strychnin), often ergot, suprarenal vasopressor principle, pituitary vasopressor principle, atropin and morphin should be considered.

When there is low blood-pressure, venous stasis, pulmonary congestion, cyanosis and a laboring, failing heart, intramuscular injections of ergot, with or without coincident venesection, may be the most valuable method of combating the condition. Life has been saved in this kind of sudden acute cardiac failure in valvular disease. When venesection is not indicated in certain conditions of low blood-pressure and heart failure, ergot has saved life. It causes contraction of the blood-vessels and seems to tone the heart. Incidentally it quiets the central nervous system. If the blood-pressure is much increased by it, the ergot should not be repeated, as too much work should not be thrown on the heart muscle. Often, however, it may be administered hypodermatically with advantage in aseptic preparation as offered in ampules, at the rate of one ampule every three hours for two or three times, and then once in six hours for a few times, the future frequency depending on the indications.

Epinephrin and Pituitary Extract: The blood-pressure-raising substance of the adrenals or of the pituitary gland (hypophysis cerebri) has been much used in heart failure. These substances certainly would not be indicated in high blood-pressure; they are indicated in low blood-pressure. They have been given intravenously; they are frequently given hypodermatically. They often act rapidly when a solution in proper dose is dropped on the tongue. The blood-pressure rise from epinephrin is quickly over; that from the pituitary extract lasts longer. In large doses or when it is too frequently repeated epinephrin depresses the respiration. Pituitary extract acts as a diuretic. Sterilized solutions of both, put up in ampules ready for hypodermatic medication are obtainable, the strength offered generally being 1 part of the active principle to 10,000 of the solution. Hypodermatic tablets of epinephrin may also be obtained. Stronger solutions of 1 part to 1,000 may be dropped on the tongue, or tablets may be dissolved on the tongue. The blood-pressure is temporarily raised and the heart stimulated by these treatments, but epinephrin is not used so often for cardiac failure as it was a short time ago.

The most satisfactory action, especially from the epinephrin, is from small doses frequently repeated. Sometimes in serious emergencies it has been found to

be of value when given intravenously in physiologic saline solution. The dose, of course, should be very small. In circulatory weakness in acute illness epinephrin has been given regularly, a few drops (perhaps the most frequent dose is 5) of a 1:1,000 solution, on the tongue, once in six hours. Such a dosage may be of value, and certainly is better than the administration of too much strychnin. Much larger or more frequent doses are likely, as just stated, to depress the respiration.

Besides the small amount of blood-pressure-raising substance secreted by the hypophysis cerebri, it has not been shown that any other gland of the body furnishes vasopressor substance except the adrenals. Contrary to the generally accepted belief that this vasopressor principle of the adrenals was necessary for the proper tonus of the vasomotor system, recent experiments by Haskins and McClure[1] show that this pressor element of the adrenal secretion is unimportant; they say, "Adrenal secretion is not, therefore, a direct factor in the maintenance of the tonus of the vasomotor system." There must be some way of amalgamating previous experimentation and beliefs with these newer investigations. It would be absurd to believe that as active a blood-pressure-raising substance as epinephrin is of no value to the economy and plays no part in the function in which it seems to be the most physiologically active. More confirmatory experimentation is needed before we can believe that adrenal secretion does not play an important part in the blood-pressure of the arterioles of the abdomen as well as of the entire body.

Atropin: When there is great cardiac weakness atropin may be used to advantage. The dose is from 1/200 to 1/150 grain hypodermatically, not repeated in many hours. It will whip up a flagging heart, more or less increase the blood-pressure, cause cerebral awakening, and may often be of value. If there is any idiosyncrasy against atropin, if the throat and mouth are made intensely dry, or if there is serious flushing or cerebral excitement, the dose should not be repeated.

Morphin: This would rarely be considered as an emergency drug in cardiac weakness. A small dose of it, not more than one-eighth grain, especially if combined with atropin, will often quiet and brace a weak heart, when there is cardiac pain in particular.

Just which drug or drugs should be used and just which are not indicated can never be specifically outlined in a text-book, a lecture or a paper. The decision can be made only at the bedside, and then mistakes, many times unavoidable, are often made.

In all conditions of shock with cardiac failure the blood-vessels of the abdomen and splanchnic system are dilated, and more or less of the blood of the body is lost in these large veins, and the peripheral and cerebral blood-pressure fails. The advantage in such a condition of firm abdominal bandages, and of raising the foot of the bed or of raising the feet and legs, need only be mentioned to be understood.

It is a pretty good working rule, in cardiac failure, not to do too much. On the other hand, life is frequently saved by proper treatment, and the physician repeatedly saves life as surely as does the surgeon with his knife.

CONVALESCENCE

When compensation has been restored, the patient may be allowed gradually to resume his usual habits and work, provided that these habits are sensible, and that the work is not one requiring severe muscular exertion. Careful rules and regulations must be laid down for him, depending on his age and the condition of his arteries, kidneys and heart muscle. It should be remembered that a patient over 40, who has had broken compensation, is always in more danger of a recurrence of this weakness than one who is younger, as after 40 the blood-pressure normally increases in all persons, and this normal increase may be just too much for a compensating heart which is overcoming all of the handicap that it can withstand. Such patients, then, should be more carefully restricted in their habits of life, and also should have longer and more frequent periods of rest.

The avoidance of all sudden exertion in any instance in which compensation has just been restored is too important not to be frequently repeated. The child must be prevented from hard playing, even running with other children, to say nothing of bicycle riding, tennis playing, baseball; football, rowing, etc. The older boy and girl may need to be restricted in their athletic pleasures, and dancing should often be prohibited. Young adults may generally, little by little, assume most of their ordinary habits of life; but carrying heavy weights up-stairs, going up more than one flight of stairs rapidly, hastening or running on the street for any purpose, and exertion, especially after eating a large meal, must all be prohibited. Graded physical exercise or athletic work, however, is essential for the patients' future health, and first walking and later more energetic exercise may be advisable.

These patients must not become chilled, as they are likely to catch cold, and a cold with them must not be neglected, as coughing or lung congestions are always more serious in valvular disease. Their feet and hands, which are often cold, should be properly clothed to keep them warm. Chilling of the extremities drives the blood to the interior of the body, increases congestion there, and by peripheral contraction raises the general blood-pressure. A weak heart generally needs the blood-pressure strengthened, but a compensating heart rarely needs an increase in peripheral blood-pressure, and any great increase from any reason is a disadvantage to such a heart. The patient should sleep in a well-ventilated room, but should not suffer the severe exposures that are advocated for pulmonary tuberculosis, as severe chilling of the body must absolutely be avoided.

The peripheral circulation is improved, the skin is kept healthy, the general circulation is equalized, and the heart is relieved by a proper frequency of warm baths. Cold baths are generally inadvisable, whether the plunge, shower or sponging; very hot baths are inadvisable on account of causing a great deal of faintness; while warm baths are not stimulating and are sedative. The Turkish and Russian bath should be prohibited. They are never advisable in cardiac disease. With kidney insufficiency, body hot-air treatment (body-baking), carefully supervised, may greatly benefit a patient who has no dilatation of the heart and who has no serious broken compensation. Surf-bathing and, generally, sea-bathing and lake-bathing are not advisable. The artificial sea-salt baths and carbon dioxid baths may do some good, but they do not lower the general blood-pressure so surely as has been advocated, and probably no great advantage is apt to be derived from such baths. If a patient cannot properly exercise, massage should be given him intermittently.

Any systemic need should be supplied. If the patient is anemic, he should receive iron. If he has no appetite, he should be encouraged by bitter tonics. If sleep does not come naturally, it must be induced by such means as do not injure the heart.

1. Haskins and McClure: Arch. Int. Med., October, 1912, p. 343.

Perhaps there is no better place in this series on diseases of the heart to discuss the diet in general and the resort treatment than at this point, as the question is one of moment after convalescence from a broken compensation, at which time every means must be inaugurated to establish a reserve heart strength to overcome the daily emergencies of life.

DIET IN HEART DISEASE

The diet in cardiac diseases has already incidentally been referred to. The decision as to what a patient ought to eat or drink must often be modified by just what the patient will do, and, as we all know, it is absolutely necessary to make some concessions in order for him to aid us in hastening his own recovery or in preventing him from having relapses. Consequently, we cannot be dogmatic with most patients with chronic heart disease. Parents should be prohibited from allowing children or adolescents with heart disease to drink tea, coffee or any alcoholic stimulant. The young boy and young man must absolutely be prohibited from indulging in tobacco at all. There is no excuse for allowing these stimulants or foods in such cases. If the patient is older and has been accustomed to tea and coffee, one cup of coffee in the morning may be allowed, provided the "dekofa" preparation is not found satisfactory. Dekofa is coffee with most of the caffein removed.[2] Whether a small cup of coffee or a cup of tea is allowed at noon is again a matter for individualization; they should rarely be allowed after the noon meal. In a patient who has been accustomed to alcohol regularly (generally an older patient), careful judgment should be used in deciding whether or not a small amount of alcohol daily should be allowed. It should never be in large amounts, even of a dilute alcohol like beer; it may be a weak wine; it may be a small amount of diluted whisky, if it seems best. Ordinarily the patient is better without it. If he is used to smoking, and a small amount does not raise the blood-pressure much, it may do him no harm to smoke a small mild cigar once or twice a day. On the other hand, if a hard smoker suddenly has heart failure, whether from exertion, from chronic disease or from acute illness, a small amount of smoking is of advantage as it tends to remove cardiac irritability, to raise the blood-pressure, and actually to quiet and improve the circulation. It is unwise during acute circulatory failure to take tobacco away entirely from a chronic tobacco user.

The character of the food which each patient should receive depends on his blood-pressure and his age. The older person with a tendency to high blood-pressure should have the protein (especially meat) reduced in amount, as any putrefaction in the intestine with absorption of products of such maldigestion irritates the blood-vessels, raises the blood-pressure, and injures the kidneys. On the other hand, a young patient should receive a sufficient meat diet rather than be overloaded with vegetables and starches, to the easy production of fermentation and gas. Flatulence from any cause must be avoided. It dilates the stomach and intestines, causing them to press on the diaphragm, so that the heart and respiration are interfered with. Also, an increased abdominal pressure, especially if there is any edema or dropsy, is bad for the circulation. A distended, tense abdomen is serious in cardiac failure. On the other hand, a flaccid, flabby, lax abdomen should be well bandaged in cardiac failure with low blood-pressure.

2. See Dekofa, a Caffein-Poor Coffee, THE JOURNAL A. M. A., July 1, 1911, p. 37.

Children do well on a milk diet, but it should be remembered that excessive amounts of any liquids, even milk and water, are inadvisable, if the circulation is poor and there is a tendency to dropsy. It has been recommended at times to limit a patient's diet for a week or so to a small amount of milk, not more than a quart in twenty-four hours. If such a patient is in bed and does not require carbohydrates, sugars or stronger proteins or more fat, such a restricted diet may aid in establishing circulatory equilibrium, although he will lose in nutrition. The excretory organs are relieved by the decreased amount of excretory products, the digestive system is rested and the circulation is improved. Such a limited diet should not be tried longer than a week, but it may be the turning-point of circulatory improvement.

The ordinary diet for a convalescing heart patient should be small in bulk, of good nutritive value, and should represent all of the different elements for nutrition. This means a small amount of meat, once a day to older patients, twice a day to those who work hard or for young patients; such vegetables as do not cause indigestion with the particular patient, and these must be individualized; such fruits as are readily digested, especially cooked fruits; generally plenty of butter, cream, olive oil if the nutrition is low, and milk, depending on the age of the patient or the ease with which it is digested. Soups, on account of their bulk and low nutritive value, should be avoided. Anything that causes indigestion, such as fried foods, hot bread, oatmeal or any other gummy, sticky, gelatinous cereal should be avoided; also spices, sauces and strong condiments. Anything that is recognized as especially loaded with nuclein and xanthin bodies, such as liver, sweetbreads and kidneys, should be prohibited, as tending to cause uric acid disturbance; and the more tendency to gout or uric acid malmetabolism the more irritated are the arteries and the more disturbed the blood-pressure. Sugars should be used moderately, unless the patient is thin and feels cold, in which case more may be given, provided there are no signs of gout or disturbed sugar metabolism. Very cold and very hot drinks or foods should be avoided.

Many times these patients have a diminished hydrochloric acid secretion, and such patients thrive on 5 drops of dilute hydrochloric acid in water, three times a day, after meals. When their nutrition has improved and the digestion becomes perfect, hydrochloric acid will generally be sufficiently secreted and the medication may be stopped.

If the patient is overweight, this obesity must be reduced, as nothing more interferes with the welfare of the heart than overweight and overfat. In these cases the diet should be that required for the condition.

If there are edemas, or a tendency to edemas, the decision should be made whether salt (sodium chlorid) should be removed from the diet. Unless there is kidney defect, probably it need not be omitted, and a long salt-free diet is certainly not advisable. This salt-free diet has been recommended not only in nephritis and heart disease, but also in diabetes insipidus and in epilepsy. It is of value if there is edema in nephritis; it is of doubtful value in heart disease; it is rarely of value in diabetes insipidus; and in epilepsy its value is probably in allowing the bromid that may be administered to have better activity in smaller doses, the bromin salt being substituted in the metabolism for the chlorin salt.

(To be continued)

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SATURDAY, JANUARY 4, 1913

BREAD

In these days when small differences in the quality and composition of food products are magnified into important factors in nutrition, the student of dietetics is often called on to exercise a highly discriminating judgment in his attitude toward what we eat. The question of the relative value of different types of bread has been debated for many years and from various points of view since the days of Sylvester Graham. This temperance reformer of the early part of the nineteenth century based his cure for alcoholism on certain radical changes in diet, laying special stress on abstinence from meats, and the use of bread made from unbolted wheat meal. Hence the names "graham flour" and "graham bread."

Wheat deserves the wide-spread consideration which has been given it, because of its intrinsic superior value as a cereal food. It easily ranks first among the food products at our disposal, although rice probably forms the staple food for a larger proportion of the human race. Wheat is the source of a large variety and number of dietary products which enter into common use everywhere; and it is this adaptability to diverse applications which figures largely in the popularity of the cereal. The wheat kernel is made up of a number of well-known parts which experience different treatment in the various milling processes that have been introduced from time to time in the preparation of flour.

When the grain is crushed in the simplest method of milling wheat, it is reduced more or less completely to a powder, and the meal thus prepared contains coarse particles of bran, the outer coverings of the seed. Bread made from such wheat meal will obviously contain all of the nutrients of the original wheat; but the bread will be coarse in texture, dark in color, and rather strong in flavor. Graham flour or wheat meal is usually made from soft winter wheats which are relatively low in protein and high in starch content, and do not accentuate the possible objectionable features referred to in the same degree as meals made from hard spring wheat. Graham flour found in the market is therefore usually lower in protein than is high-grade patent flour. Sifting wheat meal to remove the coarser particles was the first step toward the making of white flour. The early methods of the manufacture of fine flour from starchy wheats resulted in flours relatively low in inorganic ingredients and protein, and rich in carbohydrate, so that flours with no more than 8 per cent. of protein and 0.3 per cent. of ash were not uncommon. This feature is said to have inspired Liebig to recommend a return to the more albuminous wheat meal and to have given Graham the basis for his crusade in favor of bread made from unbolted wheat meal.

Despite these chemical facts and the vigorous propaganda against it, the use of fine bolted flour and the preference for white bread rapidly increased with the progress of the years. The investigations of Lawes and Gilbert[1] in England and subsequent nutrition studies in Germany gave indication that although graham and whole-wheat bread actually carry more protein and ash than white bread they yield up relatively less of these to the digestive and metabolic processes. It is further maintained by some that an increased peristaltic action due to the mechanical irritation produced by the bran on the lining of the intestine also tends to offset the supposed chemical advantage in the whole-wheat bread; others state that this mechanical irritation is beneficial, especially for those with a tendency to constipation.

The advent of the later roller-process methods of milling has continued the essential feature of the earlier schemes in separating the bran from the interior of the grain; but it has materially improved the bread flours in common use until the standard flours from hard wheat carry more protein than almost any graham flour in the market thirty years ago, and as much as many now offered for sale. Newer methods of agriculture exemplified in wheat production have assisted in increasing the gluten content of wheat flour through the altered composition of the newer varieties of the cereal.

The most reliable available nutrition experiments in respect to the digestibility and available energy of bread made from the different types of flour here discussed afford these data:

	Digestibility of Protein. Per Cent.	Availability of Energy. Per Cent.
Graham flour	81	83
Entire wheat flour	83	87
Standard patent flour	89	91

These facts have lately been supplemented by English statistics[2] which corroborate them. They show that with respect to the availability of their total energy the breads differ little; with regard to the protein there is a slight advantage on the side of the white bread. At present the differences in the composition of flours are due not only to the method of milling, but also and especially to the variety of wheat used in their manufacture. It is as important therefore to know the kinds of wheat as any other factor in making intelligent comparison of flours.

1. Lawes and Gilbert: Chemistry of Wheat and Flour, 1857.
2. Newman, L. F., Robinson, G. W., Halnan, E. T., and Neville, H. A. D.: Some Experiments on the Relative Digestibility of White and Whole Meal Breads, Jour. Hyg., 1912, xii, 110.

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In various discussions about rice we have called attention to the special nutritive significance of unknown constituents present in the cortex of the grains. In the case of wheat also these are undoubtedly removed by some of the white-flour milling processes. Ordinary metabolism experiments give no clue to the importance of these accessory factors. Presumably, however, they can have a predominating significance only when bread forms a large proportion of the total dietary; and their influence can be tested only by long observation carried out on special communities.

So far as digestibility is concerned there is no justification at present for extreme views as to the advantages or disadvantages possessed by different kinds of bread of the commoner types, at any rate as regards the availability of the more familiar nutritive constituents. The gratifying fact is that flour of all kinds is an economical food even at the present prices.

THE SOURCE OF THE STREPTOCOCCI IN EPIDEMIC SORE THROAT

On the theory that epidemic sore throat is caused by the transmission of streptococci through milk, the question arises, How does the milk become infected? There are two possible sources, bovine and human. In some of the epidemics, the conditions surrounding the outbreaks indicated that the milk might have been contaminated from either or both sources. In others, as in the Boston epidemic, possibilities of contamination from bovine sources could not be traced. The source of some of the English epidemics is said to be disease of the udder. It is clear that there always will be difficulty in excluding infection from human sources during the transit of the milk from the cow to the consumer. Since we do not know, however, that bovine streptococci, which are altogether like the human streptococci, are never pathogenic for man, we must continue to reckon with the possibility that epidemic sore throat at times may be of purely bovine origin. This course is indicated all the more when we consider the known facts in regard to milk and streptococci.

That streptococci are present in cow's milk even when it is obtained with proper safeguards from clean and healthy animals has been recognized for some time, and the idea that their presence always indicates mastitis has been given up. Heinemann and others have shown that streptococci are the common cause of lactic acid fermentation or souring of milk. This milk streptococcus — the *Streptococcus lacticus* — is present normally in the milk-ducts, the feces and on the skin of cows, and it occurs in practically all milk. Heinemann regards it as identical with *S. pyogenes*, but recently Ruediger[1] makes the point that *S. lacticus* differs from *S. pyogenes* in that it produces green or grayish colonies with little or no hemolysis; that is, it belongs to the less harmful group of streptococci as now understood. There seems to be little doubt, however, that hemolyzing streptococci, corresponding closely to *S. pyogenes*, are also frequently present in milk even from cows with healthy udders. Thus Rosenow,[2] in his attempts to secure sterile milk from absolutely healthy cows and under ideal external conditions by the use of "milk-tubes," succeeded five times in twelve trials; the milk in three of the seven failures contained *S. pyogenes* in large numbers, the cultures being pathogenic for guinea-pigs. That the milk from cows with mastitis or garget contains *S. pyogenes* in large numbers is well known everywhere. It appears, then, as if the udder of the cow occupies about the same relation to streptococci as the tonsil in man, both harboring members of the two groups of streptococci as judged by the manner of growth on blood-agar.

Certain experimental results appear to show that streptococci of bovine origin are capable of adaptation in the direction of a more vigorous parasitic existence and the acquirement of virulence as much as are the streptococci from other sources. At the time of the Chicago epidemic[3] there was an unusually large number of cases of mastitis in the cows furnishing the incriminated milk, and of sore throat among the farmers handling it. From the milk of one of the cows with mastitis Davis[4] isolated *S. pyogenes* which, after being passed through three guinea-pigs, acquired a capsule and produced watery growths — characteristics peculiar to the streptococci isolated from patients with sore throat and its complications. He obtained the same results with a strain from the throat of a young girl with rheumatism on the same farm. In other words, assuming that the streptococcus from the milk was derived from the cow and not from the milker, Davis produced the same modification in both strains, which thereby acquired the peculiar features of the strains isolated from the patients in Chicago.

There are enormous numbers of streptococci in the separator and clarifier slime of the milk industry, and Rosenow found that cultures of this slime gave rise almost exclusively to non-hemolyzing colonies without virulence for animals, but that on injection of the slime directly into animals they usually died of streptococcemia, the blood yielding pure cultures of hemolyzing streptococci which on further passage through animals became encapsulated and formed large and moist colonies on blood-agar like the strains from epidemic sore throat. On artificial cultivation these characters were soon replaced by those of the typical *S. pyogenes*. This result indicates that among the myriads of virulent streptococci present in the slime there lurked a few that were capable of acquiring more virulent powers under suitable conditions.

1. Ruediger, Gustav F.: Science, Feb. 9, 1912, p. 223.

2. Rosenow: Jour. Infect. Dis., 1912, xii, 338.

3. Capps, Joseph A., and Miller, Joseph L.: The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply, THE JOURNAL A. M. A., June 15, 1912, p. 1848.

4. Davis, David J.: Bacteriologic Study of Streptococci in Milk in Relation to Epidemic Sore Throat, THE JOURNAL A. M. A., June 15, 1912, p. 1852.

Rosenow also studied the action of fresh milk, obtained in sterile condition by means of milk-tubes, on typical strains of *S. pyogenes* from diverse sources, both human and bovine. It was found that on residence in such milk, especially if growth was delayed or prevented by keeping the inoculated milk at low temperature, the streptococci would become changed and assume the characteristics peculiar to the strains isolated from cases of epidemic sore throat — encapsulation and relatively rich growth with little hemolysis on blood-agar — and that there resulted some increase in virulence for animals. This observation is of special importance because it indicates that under certain conditions milk may favor the development of pathogenic power in streptococci that may get into it.

In accord with current views we may regard this change in the streptococci as evidence of a beginning adaptation to special conditions. Like other body fluids, milk possesses a genuine but feeble germicidal power, and by offering resistance to the growth of streptococci, especially by virtue of its opsonins and its leukocytes, the cocci are trained, so to speak, to adapt themselves to the conditions, and thus become more actively parasitic. Further investigations on the action of fresh sterile milk on streptococci should be made. Thus it would be interesting to know whether or not strains modified by Rosenow's procedure would become more resistant than before to phagocytosis by human leukocytes in the presence of human serum. If that should prove to be the case it would be strong evidence in favor of increase in virulence for man. It seems likely that by further experiments in this direction we may learn to understand better than we now do some of the conditions that tend to favor the development in streptococci of the power of becoming virulent for human beings.

As milk gives rise to epidemic sore throat and its complications by being the vehicle of virulent streptococci, it is reasonable to suspect that it frequently may be the means of transmission also in single and scattered cases of the various forms of streptococcus infection. Consequently we must endeavor to determine clearly the actual possibilities of milk in the spread of pathogenic streptococci.

IS THE MODEL TENEMENT A FAILURE?

Two of the most widely known New York model tenements are the Vanderbilt tenement, built especially for the tuberculous poor, and the Open Stair tenement across the street from it, which is now offered for sale by the private group which financed its erection. The architect of these buildings, Mr. Henry Atterbury Smith, now declares[1] that such dwellings are failures as far as housing the poor is concerned, and that they have not accomplished the purpose for which they were built. Such statements by an authority deserve consideration.

1. Smith, Henry Atterbury: Quoted in the New York Times.

The New York model tenements, Mr. Smith says, cannot help being a failure under the present conditions of their maintenance and under the provisions of the tenement-house law now in force in the metropolis. There are three reasons for such failure: 1. Legislation concerning the erection of tenement houses is becoming, in some points, too strict, demanding conditions which, in their turn, make necessary more expensive buildings and higher rents — results negativing the very purpose of such legislation. 2. Model tenements, being built by private philanthropy, are constructed of too expensive material and furnished with too many luxuries. 3. The private individuals and organizations that own the dwellings have heretofore found necessary for their maintenance the employment of salaried officials and clerks for the observation of the house's management, the gathering of statistics, etc.; the "red tape" of private philanthropy has helped to hold the rents of model dwellings at a prohibitive figure.

The model tenements of New York are really apartment houses in tenement districts. Air, light and space, and of course proper sanitation and plumbing, are essential in place of the old-fashioned dark, damp, sunless, often pest-ridden ramshackle structures. Putting up a building with high-priced luxuries, and expecting the poor to pay for them, certainly dooms it to failure. The model tenement provides electric lights, built-in tubs, telephones, roof-gardens, monolithic floors, ash chutes, garbage receptacles and closets in every room. There are certain "smart" apartment houses in expensive neighborhoods that for comfort and beauty are not nearly equal to these model tenements. So the very poor families for whom model tenements were built continue to live in other places.

Who then do live in the model tenement? "Settlement workers, social investigators, writers, artists, professional men and women, several comfortably well-off families of laboring men, some tradespeople, a good many young bachelors who keep garages and things like that." As fine a rendering of a Lizst rhapsody, evidently by a near-virtuoso, as one would hope to enjoy in a concert hall has been heard in such a model tenement. Here are indeed charming apartments for people who can afford to live in them, but they are not for the poor, who must continue to live in the old dark, insanitary tenements, the conditions of which have not been bettered by a single model tenement. Worse than this, the model tenement is not only itself too high-priced for the poor, but its presence in the neighborhood raises the rents of the inferior dwellings in that locality, and makes the housing problem for poor families one point worse than it was before. For example, near the Vanderbilt tenement referred to is a more or less ramshackle old building in which the owner has painted and made certain superficial improvements — and raised his rent!

Mr. Smith thinks that there should be a public board of appeal for the Tenement House Department but it

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is its conscientious administration of the tenement law now in force which is largely responsible for the prohibitive model tenement prices. And he would find a middle stopping-place between the dark, insanitary old-style tenements and the needless luxury of the model dwellings. Moreover, he would have such dwellings cared for by the speculative real estate dealer, simply as a matter of business, with ordinary business competition. The situation in New York has its counterpart in Chicago and other large American cities; the subject is of general and vital importance.

DEMAND CLEAN ADVERTISING

At this time of the year, those physicians—and we believe they are in the majority—who believe the proprietary medicine evil to be a serious one, can do much to lessen it, if they will. The use of worthless or fraudulent proprietary medicines by physicians depends largely, as does the use of worthless "patent medicines" by the public, on the psychology of advertising. If preparations of this type were not advertised they would go out of existence, for their continued use depends, not on any inherent merit, but on the artificial stimulation that comes from advertising. And it is the easy-going tolerance of physicians that permits the continued appearance of such advertisements; they would be barred from the pages of many medical journals if the subscribers and contributors to such journals would protest. There are, it is true, a number of so-called medical journals that exist primarily for the exploitation of proprietary nostrums. Protests in such cases would be a waste of time, for the owners of such publications could not afford to heed them. Here the subscription list is a minor question; the advertisers are the real masters of the situation.

But there remain many medical journals which, editorially, rank high and for which a subscription price is charged that makes the carrying of advertisements of worthless proprietaries entirely unnecessary from a financial point of view. For instance, there are the *Medical Record* and the *American Journal of Obstetrics*, published by William Wood & Co. The price of each is $5 per annum; in both instances the subscriber pays sufficient to warrant a demand that the advertising pages be kept clean. The same may be said of the *Annals of Surgery*, published by the J. B. Lippincott Company, which costs the subscriber $5, and the *American Journal of the Medical Sciences*, published by Lea and Febiger, also costing $5. Sporadic protests from a few physicians have been made to the owners of journals of this class. Such protests, at least in the cases of two publishers, the Lippincott Company and Lea and Febiger, were met with the statement — doubtless a true one — that the number of subscribers who have objected has been so small as to warrant the belief that their readers in general are in sympathy with the advertising policy in effect. Each of these journals carries advertisements of nostrums that are worthless or fraudulent, or both. That they do so is chargeable not to the publishers, who issue them merely as a money-making proposition, but to the physicians who continue to subscribe for them and contribute to them without raising a protest. These journals are referred to specifically, not because they are worse than, or even as bad as, many others but because they are such journals as the intelligent and better-read members of the profession might be expected to patronize. And it is such physicians, certainly, who ought to be the first to uphold the fight that the Association is making on fraud and deception within the ranks of the profession. If a hundred subscribers to each of these journals would write to the publishers protesting, there is little doubt that such advertisements would cease to appear. But so long as the medical profession will supinely tolerate this evil, so long will the evil exist.

That an advertising policy which rejects nostrum advertisements is not impossible of attainment in privately owned medical journals has been proved by at least three high-grade publications, the *Cleveland Medical Journal*, Cleveland, O., the *Southern Medical Journal*, Mobile, Ala., and *Surgery, Gynecology and Obstetrics*, Chicago. The stand taken by these three journals is the more to be commended when it is remembered that they are not published by large medical-book-publishing concerns that find a medical journal a comparatively inexpensive method of advertising their own business. The thinking members of the profession should give these journals their undivided support; at the same time they should register a protest against those other medical journals whose advertising policy is subversive to the best interests of scientific medicine, the medical profession itself and to the welfare of the public. Action is necessary in either case; passive sympathy on the one hand and unvoiced indignation on the other will do no good.

THE MILK SEDIMENT TEST

The present era of "standardization" of foods and drugs has brought about marked improvement in many products which enter largely into every-day life. This has been accomplished in various instances by the introduction of scientific methods of examination which are sufficiently "practical" to be easily applied without recourse to specially skilled experts, and which are simple enough to appeal to the average layman as furnishing useful information. The Babcock "test" for the estimation of the fat content in milk is a conspicuous illustration of the value of an accurate, yet uncomplicated analytic device. It has been largely responsible for the improvement in the composition of milk by making an exact determination easy to carry out. Even in the smallest hamlet the results of the Babcock fat test are to-day the criteria by which the commercial value of milk is adjudged.

In determining the purity as well as the quality of milk the bacterial count has an obvious importance; but this calls for elaborate laboratory technic. The acid test gives some indication of the age and general condition of milk and is used along with curd and fermentation tests by some creameries and cheese factories. The latter tests show the presence of gaseous or other undesirable fermentations; while the flavor and odor of milk always betray any bad contamination.

The so-called sediment test has of late achieved considerable prominence in certain parts of the United States.[1] The amount of sediment in milk is an indication of insanitary conditions, for dirt in milk is not only unsightly and unpalatable, but also carries with it the dangers of all kinds of contaminating bacteria. Dirty milk always has a high bacterial count. It is very objectionable if not actually dangerous.

Clean milk does not necessarily call for special farm equipment or great outlay; it merely demands attention to small details and a reasonable amount of care in stable-management. The partially covered milk-pail has been an efficient innovation in the direction of excluding dirt acquired during the milking process. One of the best ways of inducing the delivery of clean milk is by convincing the producer that his milk contains sediment, and by demonstrating through actual trials that it is easy to produce the cleaner variety. The sediment test is made by straining a pint of milk through a cotton disk one inch in diameter which is attached to the bottom of one of the several varieties of inexpensive testers. It requires only a few comparisons to show the effect of a clarifier or separator on the amount of dirty sediment in milk; and the detection of gargety and colostral milk is also rendered easy by an inspection of the cotton disks. The evidence all indicates, further, that when small-top milk-pails are used the dirt content is decreased and the number of bacteria present is correspondingly reduced. Under certain conditions the sediment test may even be used as an approximate indication of the number of bacteria that are introduced into the milk on the farm. Of course dirty market milk may be strained carefully so that it appears cleaner than its earlier handling justifies; but dirt and manure will leave their effects no matter how milk is subsequently treated. The sediment test record is a case in which "seeing is believing."

1. Baer, A. C.: The Milk Sediment Test and Its Application, Univ. Wisconsin Agric. Expt. Sta., Circ. Information 41, Sept., 1912.

THE COST OF DESTROYING LIFE

There is always something fascinating about striking statistics when they appear to present truth in a more tangible and concrete form than do the glittering generalities of an argument. In a recent issue[2] we quoted from a magazine distributed by the Equitable Life-Assurance Society to its policy-holders. The conservation commissioner of the society, Mr. E. E. Rittenhouse, is authority for the statement that the sum of $1,500,000,000 is a low estimate of the annual economic loss from preventable deaths. The experience of Colonel Gorgas and his sanitary corps in the Panama Canal Zone is, as we have said, a convincing demonstration that good health is a purchasable commodity and that sickness can be insured against and prevented if the public is willing to pay enough for safeguards. The cost of accomplishing the wonderful saving of lives on the Isthmus is estimated at about $2.43 per person annually.

In contrast with such figures, which compare favorably with familiar per capita expenditures for fire and police protection and the conservation of material property, are the data relating to the cost of the actual destruction of mankind. According to President Jordan of Stanford University[2] it now costs on the average about $15,000 to kill a man in modern war, and in the Boer War this expense ran up to nearly $40,000. When it is recalled that in a time of peace we spend nearly a million dollars a day in our own country on matters concerned with past or future wars, it is comforting to believe that the saving of human life is far cheaper than its destruction.

We have no desire to discuss the merits of the proposals for universal peace or to become partisans in a propaganda which lies outside the sphere of medical journalism. There is merit, however, in the suggestion that nations can afford to do their duty in preparing against a foe like the plague, the danger of which is always present and more ominous than war, quite as well as they can raise funds for defense against unlikely or avoidable human combats. It is perhaps an optimistic exaggeration to hold with Jordan that no infectious disease would long exist if we made adequate quarantine provision. We scarcely know all of the enemies or their insidious ways well enough yet to make it possible to fight them successfully in this fashion. But civilized nations show a lack of perspective, to say the least, when they continue to destroy life at high cost and fail to save it though a combination of knowledge with a little national energy and international cooperation would lead the way to humane economies.

2. Medical Economics Department, THE JOURNAL A. M. A., Dec. 7, 1912, p. 2087.

DEATHS OF PHYSICIANS IN 1912

During 1912 the deaths of 2,120 physicians in the United States and the Dominion of Canada were noted in THE JOURNAL. Reckoning on a conservative estimate of 150,000 physicians, this is equivalent to an annual death-rate of 14.13 per thousand. For the ten previous years the death-rates were as follows: 1911, 15.32; 1910, 16.96; 1909, 16.26; 1908, 17.39; 1907, 16.01; 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 13.73; 1902, 14.74. The average annual mortality for the period from 1902 to 1912 inclusive was therefore 15.93 per

2. Science, Dec. 6, 1912, p. 769.

thousand. The age at death varied from 22 to 99, with an average of 60 years and 23 days. The general average at death since 1904 is 59 years, 9 months and 28 days. The number of years of practice varied from 1 to 76, the average being 33 years, 2 months, 14 days. The average for the past 9 years is 32 years, 4 months and 8 days. The chief death causes in the order named were senility, cerebral hemorrhage, "heart disease," pneumonia, external causes and nephritis.

CAUSES OF DEATH.—There were 187 deaths assigned to general diseases; 264 to diseases of the nervous system; 278 to diseases of the circulatory system; 176 to diseases of the respiratory system; 95 to diseases of the digestive system; 147 to diseases of the genito-urinary system; 334 to senility; 4 to diseases of bones; 36 to suicide; 90 to accident; 12 to homicide, and 4 to other causes. Among the principal assigned causes of death are senility, 334; cerebral hemorrhage, 219; "heart disease," 200; pneumonia, 153; external causes, 138; nephritis, 127; accident, 90; after operations, 86; tuberculosis, 55; cancer, 38; suicide, 36; appendicitis, 29; angina pectoris, 25; typhoid and arteriosclerosis, each 24; diabetes, 18; septicemia, 17; gastritis, 12; anemia and meningitis, each 11; myocarditis, 10; paresis, mental alienation, embolism, cholelithiasis and cirrhosis of the liver, each 9; influenza and bronchitis, each 7; intestinal obstruction and peritonitis, each 5; hernia, 4; erysipelas, rheumatism, endocarditis, gastric ulcer, prostatitis and furunculosis, each 3; malaria, dysentery, alcoholism, pleurisy, anesthesia and enteritis, each 2, and pellagra, uncinariasis, drug addiction, locomotor ataxia, mastoiditis, pulmonary edema and placenta praevia, each 1.

The causes assigned for the 90 deaths from accident were poison, 16; falls, railways, automobiles and by animals, each 10; drowning, 9 (four physicians went down to death on the *Titanic*); asphyxia and firearms, each 5; burns and street-cars, each 4; strangulation, crushing and freezing, each 2, and sunstroke, 1. The 36 physicians who ended their lives by suicide selected the following methods: poison and firearms, each 15; asphyxia, 4, and strangulation and cutting instruments, each 1. Of the 12 homicides, 11 were due to firearms and 1 to a crushing injury from a blunt instrument. Of these 5 occurred in feuds or affrays.

AGES.—Of the decedents 19 were between the ages of 91 and 99; 157 between 81 and 90; 411 between 71 and 80; 425 between 61 and 70; 409 between 51 and 60; 319 between 41 and 50; 178 between 31 and 40, and 75 between 22 and 30. The greatest mortality occurred at the age of 65 when 62 deaths were recorded; at 70 with 56 deaths; at 73 with 55 deaths; at 60 with 54 deaths; at 68 with 52 deaths, and at 72 when 51 died. There were 7 deaths at 90; 5 at 91; 4 at 92; 5 at 93; 1 at 94; 3 at 95, and 1 physician died a week before his one-hundredth birthday anniversary.

YEARS OF PRACTICE.—By periods of 10 years the deaths were as follows: in the first decade, 165, of whom 3 had been in practice less than 1 year and 17 less than 2 years; in the second decade, 338; third decade, 418; fourth decade, 470; fifth decade, 409; sixth decade, 243; seventh decade, 69, and eighth decade, 4, 1 of whom had been in practice for more than 75 years.

MILITARY SERVICE.—During the year 306 died who had served in the Civil War, and of these 98 followed the fortunes of the Lost Cause, 97 were medical officers of United States Volunteers and 3 were medical cadets. There were 5 veterans of the Mexican War; 13 had served in the Spanish-American War and 10 had seen service in foreign wars. The Army lost 10 medical officers, past and present, 4 officers of the Medical Reserve Corps on the active and inactive lists and 18 acting assistant or contract surgeons. The Navy lost 16 medical officers, the Public Health Service 10 officers and the Revenue Cutter Service 1. The death-loss of the organized militia was 24, of whom 9 had attained the grade of surgeon-general.

MEDICAL POSITIONS.—Medical colleges sustained the loss of 141 professors, lecturers, instructors and demonstrators; hospitals lost 272 members of staffs; municipalities, townships and counties, 154 health officers; and school boards or boards of education, 79 members. There were 37 deaths of members of state boards of health, medical registration and examination and charities; 55 of coroners and medical examiners and 100 of railway surgeons.

CIVIL POSITIONS.—Of those who died, 2 had been members of Congress; 2 governors of states; 11 members of the state senates; 54 members of the house of representatives; 54 had been mayors, 32 councilmen or aldermen; 56 had served in various civil official positions; 14 had been postmasters; 19 editors of medical or lay journals; 15 were also clergymen, of whom 8 were or had been foreign missionaries; 1 had been an attorney; 8 had been members of the diplomatic corps, one of whom was minister to Liberia; 24 were bankers, 9 dentists; 2 pharmacists; 3 chemists, and 12 had been medical directors of life-insurance companies or fraternal-insurance societies.

INSECTS AND POLIOMYELITIS

The epidemiology of epidemic poliomyelitis can point to cases that occur sporadically over widely scattered areas which are apparently isolated from immediate sources of contagion, as well as to instances of the transmission of the disease by more familiar contact methods. Some of the possibilities of infection have frequently been referred to in these columns. The virus has been found in the tonsils and the secretions of the mucosa of the nasopharynx; and the nasal secretions of persons in contact with acute cases have furnished infectious material, thus suggesting a factor in the mode of transmission through apparently healthy persons to the localities where sporadic cases arise. The marked viability of the virus under the adverse condi-

tions of drying and temperature, so that it can, for example, be scattered unimpaired with dust, offers one explanation of localized epidemics.

The seasonal incidence of poliomyelitis corresponds to a certain extent with the annual wave of insect life, suggesting the possibility that some insect may play a part in the transmission of the disease. In view of this Drs. Howard and Clark of the Rockefeller Institute for Medical Research have investigated the ability of several insects that are in close relation to human beings to carry the virus of poliomyelitis.[1] They have found that the common house-fly, *Musca domestica*, can carry the virus in an active state for several days on the surface of its body and for several hours within its gastro-intestinal tract. Insects of this type, inhabiting the surroundings of man, act as mere contaminators of objects with which he is in intimate relation. House-flies cannot be viewed as active inoculators of the virus, since these insects do not bite. Their power of flight is not negligible; therefore, as Howard and Clark remark, these potential passive contaminators are theoretically capable of carrying and depositing the virus at a considerable distance from the point at which the original contamination occurred. Through the ordinary active habits of the fly the virus may be transferred to persons or to things with which persons come into close relation, and by their death the flies may through disintegration liberate surviving virus that may possibly be converted into dust.

Among the biting insects investigated, the mosquitoes, *Culex pipiens*, *Culex sollicitans*, *Culex cantator*, failed to take up the virus from infected materials. Lice, *Pediculus capitis*, and *Pediculus vestimenti*, also failed to take it out of the blood of infected animals. The bedbug, *Cimex lectularius*, on the other hand, can remove the virus from the blood and maintain it in a living state within its body for a period of at least seven days. These findings must not be hastily accepted as proof that biting insects are the common carriers of poliomyelitis virus; they are rather an indication of the possibilities that must be kept in mind in the study of the problem of transmission.

1. Howard, C. W., and Clark, P. F.: Experiments on Insect Transmission of the Virus of Poliomyelitis, Jour. Exper. Med., 1912, xvi, 850.

Current Comment

POLIOMYELITIS AND THE VITAL STATISTICS LAW IN KENTUCKY

Kentucky is one of the few states that has an efficient vital statistics law. Its enforcement is under the supervision of the state registrar, who is the head of the bureau of vital statistics. The September number of the *Bulletin* of the State Board of Health is prepared under the auspices of the bureau and contains an intensive epidemiologic and symptomatic study of an epidemic of poliomyelitis which occurred at Covington, embracing forty-eight cases. The report of this epidemic shows the value of a good vital statistics law efficiently administered. The federal census bureau has regarded as satisfactory the returns from Kentucky both in numbers and in completeness of the reports. The state bureau of vital statistics, however, has realized that the reports have been incomplete from some parts of the state, and recently an amendment to the law was enacted which makes it easy for physicians to comply with the law, and violations will no longer be tolerated. Vigorous prosecution will follow failure to report to the local and state registrars. It is the aim of the bureau to make their records of vital statistics 98 per cent. perfect. Through the reports made to the state registrar an investigation of the epidemic of poliomyelitis at Covington was started within thirty days, and all precautions taken to prevent its spread so that the epidemic ended with forty-eight cases. Similar reports of epidemics from other sections of the state of this and other contagious or infectious diseases enable the health authorities at once to set in motion machinery for their control. This was done also in the case of the epidemic of cerebrospinal meningitis which occurred in Louisville early in 1912. This prompt action based on accurate official information gives a sense of security to the people of the state in regard to the spread of epidemic diseases, and should be an example to all other states. The failure of almost one-half the states of the union to enact laws requiring the careful recording of births, deaths and reportable diseases is an almost unaccountable dereliction on the part of an intelligent people. It is said in the *Bulletin* of the Kentucky state board that if the bureau of vital statistics had done nothing else during the year except the work in connection with the two epidemics of poliomyelitis and cerebrospinal meningitis, the establishment of the bureau would be justified and the cost of its operation returned many times. Other states would no doubt find equal benefit from adequate vital statistics laws. The *Bulletin* also contains a well-written description of the etiology, pathology, symptomatology, diagnosis and treatment of epidemic poliomyelitis which is in accordance with the latest knowledge concerning the disease. The pamphlet is a valuable contribution to the literature of epidemic poliomyelitis and is a shining example of what an efficient vital statistics bureau can do for the people of a state.

THE INFLUENCE OF FATS ON THE ACTION OF NARCOTICS

The Overton-Meyer theory of narcosis, which has enjoyed much popularity in the past few years, lays stress on the relative solubility shown in the fat-like and non-fat-like tissue constituents by those indifferent substances which exert narcotic action and exhibit anesthetic properties. There appears to be a close relationship or parallelism between the narcotic strength of a compound and its so-called distribution coefficient between fatty and watery solutions. The greater the comparative solubility of a narcotic in fat as contrasted with water, the smaller will be the molecular concentration of the narcotic necessary for narcosis. This fat-soluble property of so many of the familiar narcotics might well be

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expected to modify their pharmacologic behavior when they are introduced into the alimentary tract simultaneously with fats. It would appear not unlikely that the local irritation produced by substances like alcohol in contact with mucous membranes might be decidedly modified in the presence of a product like fat in which they are more or less soluble. Furthermore, the possibility at once suggests itself that owing to such a condition of lipoid solution the narcotic will be transferred but slowly to the watery solvents in the alimentary tract during the course of the digestive cleavage and absorption of the fats; and thus the unfolding of its appropriate physiologic action may be only gradual. These conjectures have been tested experimentally in Professor Jacobj's laboratory at Tübingen.[1] When alcohol is administered to subjects simultaneously with abundance of cream or oil emulsions, the typical symptoms of intoxication are greatly delayed and modified. Pronounced interference with typical alcohol effects is here scarcely to be expected, because of the relatively good solubility of alcohol in water. Its coefficient of distribution between fat and water is low. When other narcotics, notably amylenhydrate and paraldehyd, exhibiting a far greater differential solubility in fats, are administered in the same way, the protective influence of the solvent fats is far more conspicuous. It is even possible to annihilate completely the intoxicating effect of narcotic doses of these drugs by suitable admixtures of fat. Curiously enough it is a common dietary practice, especially in the sick-room, to administer alcohol in its various guises in creamy milk or with eggs having a fat-rich yolk. This may be a far more rational procedure than has been appreciated, especially as the irritant features seem to be entirely avoided in this way; and perhaps the intake of alcohol can be greatly increased without untoward effects by feeding it along with cream when desirable. It has been suggested, in fact, that the incipient excitatory stage produced by some of the narcotics taken by mouth is due to local irritation of the gastro-intestinal mucosa more than to any inherent stimulating property of the drugs. If this is true, a corrective measure for use with narcotics like paraldehyd suggests itself.

1. Salzmann, Max: Aufhebung der narkotischen Wirkung der Stoffe der Alkoholgruppe bei gleichzeitiger Aufnahme von Fett auf Grund ihres Teilungskoeffizienten zwischen Fett und Wasser, Arch. f. exper. Path. u. Pharmakol., 1912, lxx, 233.

GOOD SECRETARIES SHOULD BE GIVEN LIFE SENTENCES

This is the time of the year when many of our county medical societies are holding their annual elections and are selecting the men who will have charge of their society activities during the coming year. While it is important that all of the officers in a wide-awake and active medical organization should be filled by efficient and energetic members, the position of secretary is perhaps of more importance than all the rest combined. It has come to be accepted in medical organizations that the activity and efficiency of a local medical society is measured largely by the effectiveness of the secretary. If he is an energetic, active officer, keenly appreciating the responsibilities and possibilities of his position, understanding the many opportunities for usefulness to the public and the profession, quick to see the need for action, and clever and original in devising methods by which these needs can be met, then, as a rule, the society is also wide-awake, efficient and active, and a power in its community. If, on the other hand, the secretary is inactive and inclined to stick close to the beaten track of conventional methods, interest in the society is apt to die out and the organization will become a perfunctory one, lacking in real efficiency and influence. The principal problem before each of our county societies is to find among its members the ideal man for an executive position. Happy is that society which has found such a secretary! He should be retained just as long as he is willing to serve, in order that his ability and energy, and especially his experience may be utilized by the organization. Good secretaries should be searched for without ceasing until they are found, and having been found they should be given the support of every good member of the society and should be continued in office as long as they are willing to serve. While the other offices may be distributed as honors to deserving members, for the good of the public, the profession and the organization, let the good secretary be retained as long as he is willing to carry on his self-sacrificing work.

ANTITYPHOID VACCINATION AS AN EXCUSE

A disposition to make the method of vaccination against typhoid an excuse for maintaining insanitary conditions is not one that should be encouraged. This seems, however, to be the tendency of a recent newspaper editorial on typhoid immunization, in which it is declared that the method will "be a boon in towns where water-purification plants cannot be built because of the expense." It can hardly be believed that this point of view will find many supporters. It is too much like blowing out the gas because there is a good chance of recovery if the pulmotor is brought in time. Taking trouble and especially spending money for a good water-supply may seem to some minds more difficult than having some one inject a prophylactic dose of dead bacilli, thus permitting the intelligent but impecunious citizen to drink sewage-laden water with impunity. We can hardly believe, however, that this method of reasoning will become general.

FRAUDULENT ADVERTISING IN HIGH-CLASS MEDICAL JOURNALS

It is the favorite retort of the publishers of some medical journals, when criticized for carrying advertisements of fraudulent proprietary remedies, that they are just as capable of determining what constitutes a fraudulent or worthless preparation as is the Council on Pharmacy and Chemistry. Of course the contention is an absurd one. A glaring instance in point may be found in recent issues of the *Annals of Surgery*. Here appear advertisements of "Mothersill's Seasick Remedy," a rank "patent medicine" advertised under fraudulent claims. Full details regarding this humbug may be found in "Nostrums and Quackery." The publishers of

the *Annals of Surgery* have stated, to those who complained of the class of advertising this journal carried, that their advertisements are submitted to, and passed on by, some of the most noted surgeons in the country! And their board of censors has, presumably, approved of this worthless and fraudulent "patent medicine"! There are few physicians but will recognize, when their attention has been drawn to it, the incongruity of such an advertisement appearing in a medical journal of presumably high class; unfortunately, however, many of the same physicians will fail to realize that the *Annals of Surgery* carries advertisements of other proprietary nostrums that are just as worthless and just as fraudulent as the alleged cure for seasickness.

THE CARE OF EPILEPTICS IN ILLINOIS

It is said that there are ten thousand epileptics in the state of Illinois for whose custody and care no provision has been made. Several attempts to establish an epileptic colony within the state have proved abortive on account of the failure of the legislature in each instance to vote any appropriation. When epileptics become public charges they are now confined in homes for the feeble-minded, in insane hospitals or jails—certainly a deplorable situation. The Committee of Fifty, composed of representative citizens of Chicago and the state of Illinois, is conducting a movement for securing the much-needed legislation providing for an epileptic colony. In a pamphlet issued by the committee the need of such an institution is forcefully set forth and an appeal is made to the citizens of the state to aid in securing a law and an adequate appropriation. An acquaintance with the conditions surrounding many of these epileptics, examples of which are given in the pamphlet, should at once convince the public and the legislators that a colony for epileptics is sorely needed.

THE CONSTRUCTIVE WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY

During the first two or three years of its existence, a single phase of the work of the Council on Pharmacy and Chemistry — the exposure of the many worthless or fraudulent proprietary medicines foisted on the medical profession — attracted attention. Gradually, however, another phase is becoming more prominent — that of its constructive work, manifested in the improvement of preparations already on the market and in the check exercised on the output of new medicines. In the New and Nonofficial Remedies Department of this issue are found two examples of the influence which the Council has had in the way of improving the quality of drugs. The manufacture of a satisfactory brand of calcium glycerophosphate by the Monsanto Chemical Works is the direct result of the report of the Council[1] on the poor quality of the calcium glycerophosphate on the American market. This report, it will be remembered, gave the results of an examination made in the Association's laboratory of the various brands on the market which showed that all were highly impure and that some were not deserving of the title "calcium glycerophosphate." In view of the poor quality of the product, the Council at that time decided not to describe calcium glycerophosphate in N. N. R. It now has been able to admit this drug and has listed the Monsanto brand as complying with the requirements adopted. Vacules cornutol represents a further improvement by the H. K. Mulford Company in the reliability of their ergot preparations. The general unreliability of ergot preparations having been demonstrated, the Mulford Company some time ago presented to the Council for examination its standardized ergot preparation, cornutol.[2] Experiments have indicated that the deterioration of ergot preparations is retarded materially when they are kept away from the air. The firm, therefore, now offers its cornutol in sealed containers from which the air has been removed prior to sealing. These efforts to market products of good quality indicate a recognition of the principle that mere words (advertising claims not substantiated by the facts) can no longer be depended on for profitable investment, but that for continued commercial success, goods of merit are demanded.

1. THE JOURNAL A. M. A., July 13, 1912, p. 134.

2. THE JOURNAL A. M. A., March 9, 1912, p. 701.

Medical News

CONNECTICUT

Personal.—Dr. Raymond Dodge, professor of psychology in Wesleyan University, Middletown, Conn., has been appointed consulting experimental psychologist at the Nutrition Laboratory of the Carnegie Institution and has had a special laboratory equipped for his work.——Dr. Laura Health Hills, Willimantic, is reported to be ill with diphtheria.——Dr. J. Hobart Egbert, Willimantic, hospital inspector for the United States Government in South and Central America, has accepted the position of chief medical officer of the Colombia Division of the United Fruit Company, with headquarters at Santa Maria.——Dr. W. G. Steadman, Southington, is reported ill with typhoid.——Dr. Joseph M. Flint has been appointed chief surgeon of the New Haven Hospital.——Dr. William F. Verdi has resigned from the staff of the New Haven Hospital to become chief of staff of the St. Raphael Hospital, New Haven.

Hunt Memorial Library Dedicated.—The new library addition to the Hunt Memorial, the building of the Hartford Medical Society, was officially dedicated December 16. The president of the society, Dr. Oliver C. Smith, in his opening address of welcome, gave a brief outline of the history of the Hunt Memorial building. The welcome was further extended by Col. Louis R. Cheney, mayor of Hartford, and Dr. Edward T. Bradstreet, Meriden, president of the Connecticut State Medical Society. To these addresses Dr. John W. Farlow, librarian of the Boston Medical Library, responded, speaking of the importance of the library not only to the medical men of the city, but to the people at large. Dr. Walter R. Steiner, librarian of the Hartford Medical Society, spoke of the further efforts to be made to increase the facilities of the library. Dr. Abraham Jacobi delivered the dedicatory address. The library annex is in the rear of the Hunt Memorial building, and is planned to permit further extension if necessary. It consists of a stack-room, a periodical room and a librarian's room. The stack-room is practically a fire-proof vault, completely shut off from the rest of the building by sliding fire-proof doors. The foundations are of concrete and the exterior walls are of brick to match the brick in the main building. The doors and frames are of metal and the window-frames and sashes are metal-covered, those in the stack-room being glazed with wired obscure glass. The three-story stack-room is on one side and the reading-room and the librarian's room on the other. The middle tier of stacks is the only one completed; the supports running to the basement, however, make it necessary only to add the ends, shelf-supports and shelves for the others when the library has grown sufficiently. An iron stairway leads from the basement stack-room to the first tier of stacks, on a level with the reading-room. From the stack-room, doors open into

the reading-room and the librarian's room, thus facilitating the handling of books. The librarian's room, located at the end of the reading-room, is shut off by a glass screen, through which a full view is obtained of the entrance to the reading-room from the main building. At one side of the reading-room is a large magazine case with slanting shelves for the current periodicals, and straight shelves underneath for the previous issues of that particular periodical. The stack-room is equipped with the Snead standard stacks, finished in dark green enamel. The deck floors are of light Vermont marble, which reflects the light onto the lower books. The completed tier is estimated to accommodate about 10,000 books. Provision has been made for the instalment of an elevator when the other stacks are put in.

ILLINOIS

Personal.—Dr. C. C. Ellis, a member of the staff of the Peoria State Hospital, has been transferred to the Chicago State Hospital, Dunning.——Dr. William Major has been elected physician of Peoria County, vice Dr. E. E. Nystrom, both of Peoria.

New Officers.—Will County Medical Society at Joliet, December 16: president, Dr. A. J. Lennon; secretary-treasurer, Dr. Marion K. Bowles.——Champaign County Medical Society at Champaign, December 12: president, Dr. Clyde D. Gulick, Urbana; secretary, Dr. Jennie Lyons, Champaign.

Humanities at State University.—The University of Illinois will open Lincoln Hall, February 12, with formal exercises. The hall is dedicated to the study of the humanities and the chief addresses will deal with the importance to the commonwealth, of adequate provision to the study of humanities. Language and literature will be considered by Prof. Bliss Perry of Harvard University; philosophy by Dr. Fred J. E. Woodridge of Columbia University, and the social sciences by Dr. Albert Shaw, editor of *The Review of Reviews*. After luncheon, the memorial address will be delivered by Dr. Hugh Black on "How Lincoln Appeared to Scotchmen." Addresses will then be given by the governor of Illinois, the president of the board of trustees of the university, the state architect, and the president of the university, after which Bishop William F. McDowell of Chicago will dedicate the building to the study of humanities in memory of Abraham Lincoln and in the name of the people of Illinois. At the conclusion of the dedicatory exercises a reception will be tendered to the guests of the university in Lincoln Hall.

INDIANA

Certificates of Merit for Food Dealers.—Dr. H. E. Barnard, state food and drug commissioner, has begun a campaign of education among health boards in the state seeking to provide for the installation of a system of certificates to be granted for excellence to owners of food-handling establishments.

New Officers.—Seventh Councilor District Medical Society at Martinsville Sanatorium, December 12: president, Dr. H. C. Robinson, Martinsville; secretary, Dr. Daniel W. Layman, Indianapolis.——Delaware County Medical Society at Muncie, December 6: president, Dr. W. W. Wadsworth, Muncie; secretary, Dr. H. D. Fair (reelected).——Allen County Medical Society at Fort Wayne, December 3: president, Dr. W. O. Gross; secretary, Dr. Garrette Van Sweringen, both of Fort Wayne.——Elkhart County Medical Society at Elkhart, December 5: president, Dr. B. F. Kuhn, Elkhart; secretary-treasurer, Dr. James A. Work, Jr.——St. Joseph County Medical Society at South Bend, December 3: president, Dr. B. C. Schanklin; secretary-treasurer, Dr. C. E. Varier.——Huntington County Medical Society at Huntington, December 4: president, Dr. Claude S. Black, Warren; secretary-treasurer, Dr. F. B. Morgan, Huntington.

IOWA

Board Report Dedicated to Secretary's Wife.—At the meeting of the State Board of Health it was unanimously agreed that the next biennial report of the board be dedicated to the late Mrs. Isabelle Sumner, wife of the secretary of the board, and formerly an assistant in the department.

New Hospitals.—The new Lansing Hospital is completely equipped and ready for occupancy. Dr. John Saam is in charge.——The construction work of the Franciscan Sisters Hospital, Seraphic Heights, near Waterloo, has been completed and the institution will be ready for patients this month. In addition to the wards, the hospital can accommodate eighty private patients.

New Officers.—Fort Dodge Medical Society, December 3: president, Dr. J. F. Studebaker; secretary, Dr. G. B. Palmer.——Fort Madison Medical Society, December 2: president, Dr. A. F. Philpott; secretary-treasurer, Dr. E. D. Price.——Southeastern Iowa Medical Association, thirty-seventh annual meeting at Fairfield, November 21: president, Dr. S. K. Davis, Libertyville; secretary, Dr. Edward F. Force, Burlington.——Ringgold County Medical Society at Mount Ayr, November 21: president, Dr. J. H. Goad, Ellston; secretary-treasurer, Dr. Samuel Bailey, Mount Ayr.——Chickasaw County Medical Society at New Hampton, November 7: president, Dr. H. D. Fallows; secretary, Dr. Paul E. Gardner, both of New Hampton.——Washington County Medical Society at Washington: president, Dr. J. C. Boice; secretary, Dr. C. A. Boice, both of Washington.——Mower County Medical Association: president, Dr. Torguson; secretary, Dr. Rebman.——Wayne County Medical Association at Corydon, November 7: president, Dr. H. T. Smith, Humeston; secretary-treasurer, Dr. W. G. Walker, Corydon.——Osceola County Medical Association at Sibley, December 11: president, Dr. Frank S. Hough; secretary-treasurer, Dr. Frank P. Winkler, Bryant, S. D.

KANSAS

Work of Bell Memorial Hospital.—During the fiscal year ended October 23, 1,500 patients received treatment at the Bell Memorial Hospital, Rosedale, which is conducted by the University of Kansas.

Medical College to Close.—It is reported that the faculty of the Kansas Medical College, Topeka, at a meeting held recently voted to discontinue the college at the close of the present session after the graduation of the class of 1913.

Wichita Hospital.—Wichita is making an earnest effort to secure $100,000 for a new and modern hospital and in the first two days of the campaign more than $13,000 was raised. An anonymous donor presented the entire equipment for the delivery room of the obstetric department.

Personal.—Dr. H. L. Aldrich, Caney, president of the state board of health, has been elected coroner of Montgomery County.——Dr. C. A. Forsyth, Mildred, who has been ill for several weeks is convalescent and has resumed practice.——Dr. E. A. Bodenhamer and wife, Wichita, returned after an eight months' trip in the mountains of Colorado and New Mexico.——Dr. Mark Beach, Clinton, was seriously injured by the overturning of his automobile near that city, recently.

New Officers.—Lyon County Medical Society at Emporia, December 3: president, Dr. A. F. Higgins; secretary-treasurer, Dr. C. C. Harvey, both of Emporia.——Crawford County Medical Society at Pittsburg, December 3: president, Dr. A. O. Blair; secretary-treasurer, Dr. C. Martin Montee, both of Pittsburg.——Shawnee County Medical Society at Topeka, December 2: president, Dr. J. A. Crabb; secretary, Dr. C. L. Williams, both of Topeka.——Montgomery County Medical Society, sixth annual meeting at Independence, December 13: president, Dr. J. H. Johnson, Coffeyville; secretary-treasurer, Dr. J. Pinkston, Independence.

Examination of Drinking-Water on Trains.—As the result of an examination of water supplied to the public for drinking purposes by the railroads passing through Kansas, which disclosed that a considerable proportion of the water supplied was unsuitable for drinking purposes on account of pollution by icing, the board has ordered that on an after July 1, 1913, no railroad company and no officer or employee of railroad companies or any other person shall cause or allow any ice to be placed in or come in contact with any water which is served for drinking purposes on railroad trains or any passenger stations, and furthermore, that all drinking-water receptacles and coolers in passenger trains be thoroughly cleansed by said railroad companies and persons in charge of the cars containing the said water receptacles and coolers at all terminal stations or whenever or wherever such cars are cleaned.

MARYLAND

Personal.—Dr. R. C. Massenburg, Towson, is said to be seriously ill.——Dr. Thomas B. Johnson, Frederick, was badly beaten by a creditor to whom he had presented a bill for professional services.

Baltimore

Personal.—Dr. John S. Pennington has recovered from the injuries received in a fall from a street car some weeks ago.——Dr. O. P. Penning, who has been ill in Johns Hopkins Hospital for several weeks, has returned home.

Small-Pox Vaccination.—In view of the outbreak of smallpox, all negroes living in the Fifteenth, Sixteenth and Seventeenth wards, and all men employed in the building of the new dam in the valley of the Gunpowder to the north, have been vaccinated by the city health department.

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Action to Curb Advertising.—A circular has been issued by the honor committee of the Baltimore City Medical Society calling attention to the violations of the rules regarding advertising by physicians in the newspapers, and asking that all such instances be reported. The circular is signed by Drs. J. Whitridge Williams, Nathan R. Gorter, H. O. Reik, Harry Fridenwald and Emil Novak.

Honor to Physician.—As a testimonial of appreciation of Dr. Thayer's declination of the call to Harvard University some time ago, a number of his friends have had two large bronze portrait medallions made of him by J. Maxwell Miller, the Baltimore sculptor. One of the castings has been presented to Mrs. Thayer and the other will go to Johns Hopkins University. About 100 small medallions have also been made for distribution among the contributors to the fund.

NEW YORK

Tuberculosis Notes.—Dr. Montgomery E. Leary, Rochester, superintendent of the Iola Sanatorium, has asked the supervisors to erect a building as a nurses' home for the institution.——The winter camp of the Dunkirk Committee for the Prevention of Tuberculosis was officially opened, November 25. The camp will accommodate fifteen patients.

Advises Vaccination of Railroad Employees.—State Health Commissioner Eugene H. Porter urges the vaccination of all railroad employees in order to prevent them from spreading small-pox. This movement has been inaugurated because of the prevalence of small-pox in certain parts of the state and because a recent epidemic in Cadosia is believed by the health authorities to have been spread by the railroads. The department of health has been notified by the New York, Ontario and Western Railroad that it has instructed its employees to be vaccinated.

New York City

Harvey Society Lecture.—The sixth Harvey Society lecture will be given January 18 at the New York Academy of Medicine. Major Russell, of the United States Army, will lecture on "The Prevention of Typhoid."

Small-Pox on Liner.—A case of small-pox was found aboard the steamship *Eugenia*, which arrived recently from Triest and another case has been reported in a young Austrian woman who arrived in this country a few days before becoming ill as a steerage passenger on the Hamburg-American line.

Cancer Home Opened.—St. Rose's Free Home for Incurable Cancer at Corlears Park and East River was dedicated on December 15, by Cardinal Farley. It has accommodations for 100 inmates and both men and women will be received. The institution is supported through private charity.

Guild House for Deaf Mutes.—The Gallaudet Memorial Guild House, which owes its existence to the efforts of the late Rev. Dr. Thomas Gallaudet, was dedicated December 8. The building is designed as a center of instruction and social life for deaf mutes and is the only institution of the kind in this country.

Health Exhibit for Colored People.—The New York Child Welfare Association, the National Association for the Advancement of Colored People, the National League on Urban Conditions among Negroes, and the clergymen, teachers, physicians and business men interested in the settlement work of San Juan Hill neighborhood opened a health exhibit at the Henrietta School on West Sixty-Third Street. Nurses and doctors gave instructions in the care of children, preparation of milk, selection of food, proper clothing, the care of the teeth and kindred subjects.

Physicians Incorporate a New Organization.—The American Society of Medical Economics has recently been incorporated and Dr. E. Eliot Harris, chairman of the committee on legislation of the Medical Society of the County of New York, has been elected president. All licensed practitioners are eligible to membership in this organization no matter to what school of medicine they may belong. The object of the society is to take up economical work that the scientific medical profession cannot handle; its main object is to foster a spirit of loyalty to the medical profession and to the public. Among the purposes of the society are the exposition and suppression of all forms of quackery or dishonorable practice of medicine, rendering assistance to constituted authorities in the enforcement of all medical laws relating to the sale of pure and standard food and drugs and the accurate compounding and dispensing of medicine. It will aid in legislation which shall provide for the revocation of the license to practice medicine or any license issued by the board of regents for causes such as fraudulent advertising or advertising in a way intended to impose on ignorant or unsuspecting persons. It will investigate and take action in regard to the practice of all licensed physicians, whether they be members of this society or not, in so far as the same reflects unfavorably on the profession or the public. The society will cooperate with other societies in establishing certified pharmacies and will oppose encroachments on the practice of medicine, such as the extension of the Board of Health along the lines of clinics and curative medicine instead of extension along the lines of preventive medicine.

Circular on Venereal Disease.—The Commissioner of Health has sent a circular letter to all physicians in New York City requesting information as to the number of cases of syphilis, chancroid and gonorrhea seen by each, and furthermore requesting all physicians to report promptly all cases of venereal disease coming under their observation, omitting the name and address but stating sex and age of patient, stage and duration of the infection and date and source of contraction of the infection if obtainable. Report cards for this purpose will be forwarded to physicians on request. The superintendents of all public institutions have been required to report such cases since May 1, 1912, and it is desired to obtain the same information with regard to private patients. The department of health is prepared to give assistance in the diagnosis of these cases by making the Wassermann tests and bacteriologic examinations of discharges free of charge.

The Otisville Tuberculosis Sanitarium.—The November bulletin of the department of health is given up to a description of this institution in which tuberculosis patients are cared for under the supervision of the department. The institution differs in many important particulars from any other existing institution and in the opinion of those competent to judge comes nearer the solution of the problem of the institutional care of the tuberculous poor than has been found elsewhere. The characteristic feature of the administration of the Otisville Sanitarium is its insistence on practically continuous outdoor treatment. This is carried so far that out of 500 patients now in the institution not more than twenty-five can, under any possible conditions, be placed within four walls. Patients taken from the hot stuffy tenements in the middle of the winter and made to live out of doors night and day show only good results. Since the institution has been open there has never been a death from any acute disease nor has there ever been a case of contagious disease in the institution. It is the belief of the department that eventually at least 1,500 persons will be provided for at this place. It was intended originally to care only for incipient cases but it has been found that the larger proportion of cases among the poor are no longer incipient when recognized. There are not now enough recognized incipient cases in New York City to fill a large institution. The cases in the second stage often do quite as well as the incipient cases. Many advanced cases frequently show surprising improvement after a few months in the sanatorium. A carefully supervised "work cure" instead of a "rest cure" has given most satisfactory results and has been an economic factor of no small moment in the management of the institution.

NORTH CAROLINA

New Officers.—Buncombe County Medical Society, seventeenth annual meeting, at Asheville, December 17: president, Dr. A. W. Calloway; secretary-treasurer, Dr. G. S. Tennent, both of Asheville.

Personal.—Dr. Ralph B. Seem, Wilmington, recently appointed assistant superintendent of the general dispensary of Johns Hopkins University, has gone north to study the systems employed in the dispensaries, especially in Boston and New York.——Dr. William J. Lumsden, Elizabeth City, who has been ill for nearly a year on account of injuries received in a fall on the ice, is reported to be improving.

OHIO

Physicians' Building.—A seven- or eight-story building for the exclusive use of physicians and dentists is to be erected at Huron and Adams Streets, Toledo, at a cost of $350,000 to $400,000.

Medical Staff Reappointed.—The trustees of the Miami Valley Hospital, Dayton, have reappointed Drs. Webster S. Smith chief of staff; Dr. C. W. King, C. H. Breindenbach and George Goodhue physicians on the medical staff; Drs. F. Dale Barker and William E. Ewing on the surgical staff; Drs. A. H. Dun-

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ham, F. Dale and W. E. Ellman, obstetricians; Drs. H. B. Harris and H. D. Rinehart, oculists and aurists, and Drs. W. J. Conklin and J. A. Davison, members of the consulting staff.

Antituberculosis Items.—The Belmont County Antituberculosis Society was organized in Bellaire, recently, Dr. J. S. McClellan, Bellaire, being elected a member of the executive committee.——The Hancock County Society for the Prevention of Tuberculosis was organized November 7. Dr. Cornelia B. Kennedy, Findlay, was elected president, and Dr. J. C. Tritch, vice-president.——In the case of the tuberculosis sanatorium for the district composed of Darke and Miami Counties, the litigation has resulted in the following rulings: that the purchase of the hospital site in Miami County was valid; that the trustees of the hospitals had authority to appropriate plans and specifications and to construct and equip a hospital; that the act of the trustees appointing a superintendent, nurses and employees and fixing salaries was unconstitutional and that the means for the maintenance of the institution must be determined jointly by the county commissioners and the counties involved.——The supreme court sustained the lower court in allowing a Stark County taxpayer a mandamus compelling the county commissioners, auditor and treasurer, to carry out their part of the contract with Columbiana, Mahoning, Portage and Summit Counties, jointly to construct a tuberculosis sanatorium at an expense of $100,000.

PENNSYLVANIA

Anniversary of Academy.—The Harrisburg Academy of Medicine celebrated its seventeenth anniversary, November 29. The address of the evening was delivered by Dr. John B. Deaver, Philadelphia.

Hospital News.—The new Cresson State Hospital for Tuberculosis opened December 26. It will accommodate 360 patients.——Mercy Hospital, Altoona, has asked the legislature for $10,000 for maintenance during the coming biennium and $15,000 for an annex.——The first patient was committed to the State Hospital for the Criminal Insane, Fairview, December 14; later, sixty patients were transferred from the Norristown State Hospital.

New Officers.—Jefferson Medical College Alumni Association of Northeastern Pennsylvania, annual meeting in Wilkes-Barre, December 19: Dr. S. M. Wolfe, Wilkes-Barre, president; Dr. J. Norman White, Scranton, secretary.——Mifflin County Medical Society: President, Dr. C. H. Brisbin; secretary, Dr. J. A. C. Clarkson, both of Lewiston.——Cambria County Medical Association at Johnstown, December 12: president, Dr. W. O. Lubken; secrtary, Dr. Henry Cartin, both of Johnstown.

Small-Pox.—December 16, two cases of small-pox were discovered in the Italian settlement in Chester and all the inmates of twenty-four houses in that district were vaccinated and the Lincoln Public School attended by children from this district was fumigated. December 21, four new cases of small-pox were reported from the locality of Front and Parker streets, and Dr. W. Knowles Evans, president of the Board of Health, conducted a wholesale vaccine crusade on this street.——The State Department of Health, which has been in charge of the health affairs of Carbondale during the recent outbreak of small-pox, has returned the management to the health officials of that city.

Personal.—Dr. John W. Luther is the first burgess of the new borough of Palmerton.——Dr. L. R. Ranck, Milton, has been elected vice-presiuent of the University of Pennsylvania Alumni Association for the counties of Northumberland, Union, Snyder, Montour and Columbia.——Dr. H. C. Chisolm, Huntingdon, underwent an operation for necrosis of the jaw, in a hospital in Philadelphia.——Dr. John A. Darrow, Erie, has recovered from the recent accident to his hand and has resumed practice.——Dr. Edwin B. Miller, Altoona, who has been under treatment in Philadelphia for several weeks, has returned home, recovered.——Dr. Jerome L. Pyle, Gradyville, is under treatment at the Chester Hospital on account of an injury to an eye.

Philadelphia

Hospital News.—To raise $100,000 for the Abington General Hospital, a bazaar was held at Jenkintown, December 5.

New Officers.—Philadelphia Medical Examiners Association, December 10: president, Dr. A. W. Hammer, Philadelphia; secretary, Dr. J. L. Eisenberg, Norristown.

Personal.—Dr. L. Davis Frescoln has resigned as chief resident of the Episcopal Hospital in order to devote his time to private practice.——Dr. Lawrence F. Flick was elected president of the American Catholic Historical Society at its twenty-eighth annual meeting, December 16.

War Against Unsanitary Housing Conditions.—The Philadelphia Academy of Medicine and Allied Sciences, composed of colored physicians, dentists and pharmacists, held a meeting December 16, at which a campaign against the unsanitary condition of houses occupied by people of their race was planned.

Plans to Prevent Blindness.—The Commission for the Conservation of Vision, which was appointed at the last convention of the Pennsylvania State Medical Society, held a meeting recently, at which plans to reduce the number of cases of blindness were discussed, and a campaign throughout the state against the roller-towel and the use of wood alcohol in many cheap products, such as varnish, was outlined.

Red Cross Seal Profits.—The Pennsylvania Society for the Prevention of Tuberculosis decided to share the proceeds of the Red Cross seal sale in Philadelphia as follows: Twenty-eight per cent. to the White Haven Sanitarium; 38 per cent. to the Kensington Dispensary and 8 per cent. to the Day Camp for Tuberculosis on the Bainbridge Street Pier, the remainder of the money to be used by the society to push its campaign.

Decrease in Contagious and Infectious Diseases.—During the week ending December 21, there was a decided falling off in the number of "reportable" diseases, 674 new cases of infectious and contagious disease being recorded as compared with 829 for the preceding week. Fourteen cases of typhoid were reported as compared with twenty-two the week previous; ninety-four cases of scarlet fever compared with 120; 145 cases of chicken-pox as compared with 171, and sixty-six cases of diphtheria as compared with sixty-eight last week.

New Public Charity Society.—A Public Charities Association of this city was organized at a conference held in the Hotel Walton, December 5. There were present representatives of charitable organizations throughout the state, and George Vaux, Jr., was made president and William B. Buck, secretary, of the new society. One of the main objects of the association is to bring about the segregation of all the feeble-minded persons in the state by 1920. Other objects include the adoption of a sound state policy in making charitable appropriations, the development of an adequate system of state institutions, the removal of children from almshouses, proper state or county provision for tuberculosis, the establishment of a state reformatory for women and the adoption of more modern and scientific methods of dealing with inebriety and vagrancy.

GENERAL

Railway Surgeons Meet.—At the sixth annual meeting of the Surgical Association of the Chicago and Northwestern Railway held at Chicago, December 19, Dr. A. L. Wright, Carroll, Ia., was elected president, and Dr. John E. Owens, Chicago, chairman of the executive board.

Meeting of Western Surgeons.—The Western Surgical Association at its annual meeting in Cincinnati, December 21, elected Dr. Jabez N. Jackson, Kansas City, Mo., president; Drs. J. Rilus Eastman, Indianapolis, and Major G. Soelig, St. Louis, vice-presidents; Dr. Arthur Mann, Minneapolis, secretary-treasurer, and Dr. Lewis L. McArthur, Chicago, a member of the executive council. St. Louis was selected as the meeting place for 1913.

FOREIGN

Tropical Veterinary Bulletin.—This new publication is issued under the direction of the Tropical Diseases Bureau, London, and contains full abstracts of papers of particular interest on veterinary tropical diseases appearing in the literature, together with an index of articles relating to these and allied subjects not treated in more extended abstracts. In view of the great interest which all insect-borne and other tropical animal diseases have at the present time, and their close relation, in many instances, with the diseases of man, the collection of this literature in the *Bulletin* makes a very interesting and valuable publication. It is sold by Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, W. C., London.

From the Seat of War.—A letter in the *Medizinische Klinik*, December 1, states that bacteriologists and serologists form a group at the seat of war as large and important as the group of surgeons. Dr. Sondermeyer, surgeon-in-chief of the Servian army, has inaugurated a series of conferences of physicians, to meet at Belgrade. At the first, a number of recent experiences were related, among the speakers being Professor Jedlicka of Prague who reported 700 clinical cases at the seat of war. Of

his twenty-five gunshot wounds of the skull, twelve proved soon fatal and in ten more the patients succumbed notwithstanding the operation. In the others the bullet passed through the skull without any symptoms on the part of the brain or any paralysis. Four patients with circumscribed peritonitis were given operative treatment the fifth day and all are convalescing. One soldier was shot in the stomach and lay on the battle-field for three days before he was carried to the hospital. The man is now convalescing fast, eight days after the abdomen was opened. The letter confirms the newspaper statements that by November 24 there were 25,000 sick with cholera at Constantinople and that 5,000 were installed in the great mosque. Among the serologists on the spot are a group of four from Vienna in charge of Prof. R. Kraus; Dr. Kaunitz from the Berlin institute is with them. The sixth party sent out by the German Red Cross is headed by Prof. A. Hildebrand of Berlin and the seventh is in charge of Dreyer of Breslau and Geisler of Stettin. The latter party has started for Scutari on the southern shore of the Bosphorus. Both are equipped with a complete bacteriologic laboratory. The serologists brought large quantities of cholera vaccine with them and also vaccine and serum to combat plague.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 14, 1912.

The National Insurance Act

I stated in my last letter that in issuing a memorandum to the divisions of the British Medical Association on the final terms offered by the government the council did not send any covering letter advising whether to accept or reject. It appears that at the meeting of the council a strong effort was made to induce that body to adopt a hostile attitude toward the act and that it was only by a very small majority that it was decided not to do so. Many meetings of the divisions have been held, to which non-members of the association residing in the area have been invited, and a great majority of both members and non-members have voted against working the act. Thus the first metropolitan division to vote was the Kensington. Here 200 members and forty-five non-members voted against working the act while fourteen members and four non-members voted for the act. At the Shropshire and Mid-Wales division, eighty-one members and eleven non-members voted for refusing to serve and only one member and two non-members were in favor of accepting. On the other hand, in Glasgow it was decided by a large majority to work the act. It seems a foregone conclusion that the association will refuse by a large majority to work the act. This momentous question will be decided at a special representative meeting to be held in London on December 21 to receive the reports of the result of the votes of the profession at the divisional meetings. In the meantime energetic efforts are being made by circulars issued to the members of the profession, urging acceptance as well as rejection, to influence their decision. The refusal of the association to work the act will by no means end the struggle. The government, having gone so far as to collect contributions from both employers and workmen, under the promise of medical service, cannot now withdraw, nor is it likely to make any more concessions. Moreover, associations of physicians are springing up in various places for the purpose of working the act. One which has arisen in London was described in my last letter. From Birmingham an appeal has been made by a body of twenty-six physicians to the whole profession asking their fellow practitioners to work the act. They point out that if the government terms are now rejected no more offers can be expected. As soon as possible whole-time service of physicians will be formed, in selected towns first. "In this city, at any rate, the general practitioner will be out in the cold. Under the act the physicians here would have an average of 1,000 persons, yielding $1,750 per annum. This is for workers; a physician need not take more than he wants, but it is well known that a considerably larger number can be attended efficiently in addition to a large private practice." It is pointed out that the guarantee fund established by the British Medical Association to compensate for the loss of income sustained by the resignation of contract practice would in the case of Birmingham yield the 200 club physicians only $75 each, while they have resigned incomes ranging from $250 to $2,000.

A SERIOUS REVOLT

The inaugural meeting of the National Insurance Practitioners' Association (described in my last letter) has been well attended and the association is receiving support from two prominent members of the council of the British Medical Association—Dr. Maclean, formerly chairman of the representative body, who has taken a prominent part in the negotiations with the government, and Dr. Lauriston Shaw, physician to Guy's Hospital. The latter gave an address in which he emphasized the necessity of a clear expression of opinion by those who desired to form panels under the act, lest in ignorance of the true position an unwise decision should be reached on December 21 by the British Medical Association. He considered the terms now offered far more remunerative than any that had ever been obtained before from practice among the insured classes and that the conditions were honorable, such as need give no cause for anxiety to any physician desiring to give faithful service to his patients. Speaking with a full sense of his responsibility as a member of the council of the British Medical Association and owning an almost passionate regard for the principles of professional union, he felt it his duty to say that if the association decided to call on all members of the profession to refuse to work the act the moment will have arrived when large numbers of physicians will feel compelled to consider whether it is possible for them to sacrifice that which they conceive to be the wide interests of the community to the narrow and selfish interests of the profession. Dr. Addison, M.P., an eminent anatomist and formerly lecturer on anatomy at St. Bartholomew's Hospital, who has now given up teaching for politics and is a prominent supporter of the government, said that if the profession attempted to boycott the act the government would use the whole of its power in one of two directions: either the friendly societies would be encouraged to engage physicians themselves or the government would engage physicians to do the work. He had no doubt the government would ge them, and if so, they would not be displaced afterward to make room for any other form of service. Thus, before the poll which the British Medical Association is taking of the profession is decided organized efforts are being made and supported by some of the leaders of the association to work the act whatever the decision may be. It seems clear that the decision will be to refuse service by a large majority, but it seems probable that a stampede may occur after the decision. The remarkable union of the profession brought about by the association for the purpose of resisting the act will then disappear and bitter antagonism will arise between the two sections of the profession. The situation illustrates a fundamental law of all strikes and combinations: by union better terms can be obtained up to a certain point, but if the demands are pushed beyond that point the resistance becomes too great and the union is broken with disastrous consequences. As I stated in a previous letter, the great increase in the terms offered by the government would necessarily strengthen those in favor of working the act. The British Medical Association has done good service to the profession in obtaining those terms. But its members may now be confronted with the spectacle of the fruits of those efforts being reaped by those who are termed—in the language of the trade-unions—"blacklegs."

Testimonial to Sir Patrick Manson

A fund for a testimonial to Sir Patrick Manson on the occasion of his retirement is being raised in recognition of his epoch-making work in tropical medicine. The testimonial will take two forms—national and international. The national testimonial will consist of a portrait painted by a well-known artist and also, it is hoped, a scholarship for the advancement of tropical medicine in some one of its branches. The international tribute is in the form of a medallion of gold, bearing an impression of Sir Patrick Manson's features. A committee consisting of every one who is eminent in tropical medicine in this country has been formed for the purpose of raising contributions.

Successful Inoculation Against Typhoid in India

According to Col. R. H. Firth, professor in the Army Medical Staff College, the practice of inoculation in India has produced a steady diminution in the number of cases of typhoid fever among the European troops in 1911. Among an inoculated rank and file population of 60,635 there were 106 cases of fever and six deaths, while a non-inoculated similar population of 8,477 furnished sixty-four cases with eleven deaths. Paratyphoid has only been positively distinguished from typhoid since 1910 and is responsible for a large amount of the case incidence, although for not more than 2 per cent. of the mortality. It appears to be mainly diffused by human intercourse, and to produce a larger proportion of subsequent "carriers" of infection than enteric, so much so that it has been found necessary to examine carefully all convalescents before they are permitted to return to duty.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 13, 1912.

Syphilitic Origin of Chorea

The Société médicale des hôpitaux de Paris devoted its recent meetings to a discussion of Dr. Milian's theory that chorea is of syphilitic origin. Milian has made an investigation into the antecedents of a number of chorea patients taken care of in various children's hospitals. Eleven out of fifteen gave a positive Wassermann. Two other patients showed some of the dystrophic stigmata commonly attributed to hereditary syphilis. In the last two cases the syphilitic origin of the chorea was doubtful. From these results Milian believes that syphilis, hereditary or acquired, may be regarded as the most important etiologic factor of chorea. He has been able to demonstrate the syphilitic nature of chorea by quickly curing three cases by mercurial treatment. He also pointed to the fact that the treatment for chorea empirically sanctioned is arsenic in large doses. In the treatment of chorea Trousseau used with success calomel and antimony; all these are specifics for syphilis. Finally the progress of chorea, which is nearly apyretic, running a subacute course with remissions and relapses, together with the complications (aphasia, hemiplegia, mental disorders) can only establish the syphilitic nature of the disease.

Numerous objections were raised to this theory. Dr. Comby said that in order to change the view of pediatrists as to the origin of chorea it would be necessary to present statistics not of fifteen cases but of hundreds or thousands. Without doubt arsenic is a good treatment for chorea, and according to Milian salvarsan would be the best treatment of syphilis; but that the arsenical compounds are equally efficacious in the two diseases is no groupd for concluding that they have a common origin. Dr. Guillain agreed with Dr. Comby and from the point of view of a neurologist said that in the spinal fluid of patients with chorea only a slight meningeal reaction is ever observed, and that it is variable at best. In these patients there is no lymphocytosis, excess of albumin or Argyll Robertson sign. At autopsies which he has been able to make he has never found the customary lesions of hereditary syphilis in the nervous centers or in the spinal cord. As to antecedents, Guillain said that when he was chief of the clinic at the Salpêtrière he had never found syphilis among patients with chorea. Dr. Nobécourt declared that although he had searched systematically in infants for signs of hereditary syphilis, he had not been able to discover one among the numerous patients with chorea who had passed through his hands. Moreover, in the service of Professor Hutinel, Dr. Tixier had obtained a negative Wassermann as a rule in patients with chorea. To Nobécourt chorea, by reason of the frequency of rheumatic heart disease which complicates it, seems to be of infectious origin. Nobécourt has tried salvarsan not in subcutaneous injections but in enemas in a dosage of 0.1 gm. according to the method recommended by Weill, Morel and Mouriquand (of Lyons). In seven out of ten cases the results have been failures. In three cases he observed a slight improvement. Nobécourt thinks then that arsenic does not have a constant effect in the treatment of chorea.

Dr. Claude expressed the belief that in certain conditions it is possible that syphilis determines chorea, but that this does not imply a syphilitic origin of this affection. Claude had two patients who died of chorea; neither clinically nor by necropsy did he find specific lesions. Dr. Triboulet in four hundred cases of chorea found only four which had been accompanied with signs of hereditary syphilis. The specificity of chorea did not appear defensible to him, for in the great majority of cases this affection when left to itself ends spontaneously without recourse to any treatment, arsenical or otherwise, being necessary. On the other hand, Dr. Babonneix, without coming to the same conclusion as Milian on the syphilitic nature of chorea, said that in 145 cases of this disease which he had observed there were thirty-six in which hereditary syphilis might be said to exist. Although these findings do not establish the syphilitic origin of chorea, they permit the conclusion that in the etiology of chorea hereditary syphilis sometimes may be a predisposing and determining cause.

Dr. Milian's reply was that if all cases of chorea are not of syphilitic origin the great frequency of hereditary syphilis among patients cannot be considered a negligible feature. It is on conclusions of this kind that the syphilitic origin of tabes depends. Rheumatism, which has actually been considered a factor in chorea, is less frequent than syphilis. It is not a mere coincidence that the specific remedies of syphilis (mercury, arsenic and antimony) have been administered with equal success in chorea. As to the negative results of Nobécourt, who employed an untrustworthy method of treatment (enemas of salvarsan) Milian offered the good results obtained by von Bókay, Pawlow and others in the treatment of chorea by salvarsan. As to the objections that the Argyll Robertson sign is not found among these patients, Milian said that the abolition of the patellar reflex is found less frequently, which in the absence of paraplegia is valuable as a sign of syphilis.

At the meeting of the Académie de médecine of December 10, Prof. Pierre Marie said that he had treated by intravenous injections of salvarsan twenty-five children or young persons who had chorea of greater or lesser intensity. These injections had been repeated, on an average, four times a week. The doses had varied from 0.2 to 0.3 gm. and even to 0.35 gm. among the older children. Never had he observed the slightest symptom from the second or third injection. There was quite a diminution as a rule in the choreic movements. Cure generally followed the third or fourth injections, so that the duration of the disease was reduced to three or four weeks. Though these results might justify the supposition that chorea is an affection of syphilitic origin, such is not the opinion of Pierre Marie. In fact, among eight of his patients he obtained a negative Wassermann in the spinal fluid. He is of the opinion that salvarsan acts in chorea by virtue of its being an arsenical compound with an antiparasitic effect on the pathogenic agent of chorea. In connection with this paper Professor Chauffard said that the various arsenical compounds which had been introduced recently into the treatment of several affections, often with success, ought to be considered not as specific for syphilis but rather as agents of a more general application.

Prohibition of Absinthe in the Colonies

In view of the distressing results from the admission of alcohol into our African possessions, the governor of the Ivory Coast has taken the radical measure of absolutely prohibiting the entrance of absinthe into the territory under his jurisdiction. The colonial minister also is considering this question for the purpose of drawing up a measure to be enforced in all our colonial possessions. Prohibition would certainly do more good than the increase in the tax on alcohol recently adopted (THE JOURNAL, Sept. 14, 1912, p. 891).

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 6, 1912.

Personal

Professor Schultze of Greifswald has received a call to Göttingen as director of the clinic for nervous diseases, succeeding Professor Cramer, who died recently. Professor Schultze's position is to be filled by Professor Schröder, assistant of Professor Bonhöffer of Berlin.

Professor Merkel has been promoted to the chair of legal medicine and pathologic anatomy at Erlangen.

In addition to many other "salvarsan orders," Professor Ehrlich of Frankfort has just received also the Bavarian Maximilian order, which is the highest Bavarian decoration for scientific services.

Congress Themes

The next German Congress for Internal Medicine will be held, as usual, in the latter part of April at Wiesbaden. The most important theme to be discussed is "Nature and Treatment of Fever." The speakers are Profs. von Krehl of Heidelberg, and Hans Horst Meyer of Vienna. Professor Schittenhelm of Königsberg has promised, at the request of the committee, to speak on the "Relation between Anaphylaxis and Fever."

Regulation of the Manufacture and Sale of Carbonated Beverages

The Bundesrath (federal council) has just published a regulation of the manufacture and trade in carbonated beverages, which will be effective in the various German states. The regulations apply to all establishments (with the exception of champagne, and effervescent wines of fruit) in which beverages are prepared for commercial use by the addition of carbon dioxid, as well as to the trade in such beverages. For the manufacture of such beverages distilled water from the public water-supply must be used and this water must be kept until used in clean, closed vessels. The proper authorities may permit the use of undistilled water from other sources if the manufacturer can show by local inspection of the source and a chemical and bacteriologic examination of the water by suitable experts that the water is unobjectionable. The production of such evidence can be required by the proper authorities

at certain intervals and also at any time when a suspicion of contamination exists. The carbon dioxid to be used must be free from insanitary mixtures. The salts, acids, etc., to be used as additions to the beverages must be pure, and, if included in the German Pharmacopeia, must come up to that standard. In beverages put on the market as fruit and effervescing lemonades, in addition to water, carbon dioxid and cane-sugar or beet-sugar, and, in the case of citrus fruit drinks, flavoring from the rind, only natural fruit juice or pure fruit syrup (prepared from natural fruit juice and sugar) may be used. Beverages containing any other ingredients than those named must be labeled as artificial. If the carbon dioxid is prepared by the mineral water establishment in apparatus for deriving it from carbonated mineral waters, it must be suitably purified before use. The acids used must be free from arsenic. Those parts of the apparatus which serve for the preparation and delivery of the beverages and which come in contact with the water containing carbon dioxid must be permanently resistant to dilute acids, and, in particular, copper or its alloys must not be used unless they are heavily tinned. The rooms in which beverages are prepared must be light, well aired and clean; the apparatus must be so placed that it can be inspected from all sides. The rooms must not be used for purposes which might unfavorably influence the manufacture of the drinks named in these regulations. The bottles in which carbonated beverages are delivered must be thoroughly cleansed before filling. The use of bottles with damaged mouths or damaged rubber rings is forbidden. The safety of employees is provided for by a number of regulations requiring the use of goggles, wristlets and other protective appliances, and prohibiting the use of dangerous or unreliable apparatus. Apparatus of insufficient resisting power must not be retained in the establishment.

Diplomas in Germany

Among the antiquated customs of the universities, which have their origin in the middle ages, belongs the regulation that diplomas of doctors shall be written in the Latin language. To the University of Marburg, I believe, belongs the credit of being the first to abrogate this custom, inasmuch as it has been determined that in that institution diplomas of doctors hereafter shall be written in the German language.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 9, 1912.

Professor von Noorden's Impression of American Conditions

Professor von Noorden returned a few days ago from his tour through America, and in newspaper interviews and in a talk before a medical society has given the details of the journey. He had been delegated by the Austrian government as official representative to the International Congress on Hygiene and Demography, held at Washington, and he spoke highly of the standard attained by American medicine in this special branch. It struck him that the problems of disposal of sewage, of drainage and the water-supply for all the rapidly growing towns of America, are much more complicated and also much more looked after than in the average town of Europe. He strongly emphasized that the results obtained in the Navy by compulsory antityphoid inoculation (a reduction from five or six hundred to two or three yearly cases) should be followed up by similar experiments in typhoid districts in Europe. Von Noorden found that diseases of the gastro-intestinal tract, including disturbances of metabolism and feeding, are much more frequent in the United States. The pure food law struck him as a useful and sensible measure, resulting in much good for the health and a saving in money of the general public, although the patent medicine business tries to evade it. He would never have believed that it was possible to set up such frauds on suffering mankind as some of the American "cures" and that these fakes would find people foolish enough to buy and use them. In scientific standards some of the American hospitals and medical schools have no rivals, and the professor acknowledges that metabolism, for instance, is studied there better than anywhere else in the world, perhaps even including Germany. He was astonished, however, to find that so few sanatoriums are in existence for other diseases than tuberculosis, so that patients who wish to avail themselves of the opportunities offered in certain bathing places or spas have to stay in hotels. Especially in California, which boasts of such a splendid climate that he would call it a pearl of the world, this lack is a serious drawback; otherwise it would be the Mecca of people suffering from arteriosclerosis, nephritis, respiratory troubles and disturbances of the hematopoietic organs. He believes that the standard of medical education is much higher now than it was seven years ago, and he admits that American surgeons rank among the first in the world. As regards the hospitals, von Noorden says that as a rule they are not so good as the modern European hospitals, but some of them in the large cities are really absolutely first class, and could serve as a model for Europe, while the older European hospitals are not so good as the older American ones, the latter offering more personal comfort to the patient.

Opening of New Medical Institutes

A few days ago the Mariehilfer Ambulatorium opened an up-to-date hospital which is intended to accommodate forty patients. The institute, which is frequented by more than 40,000 outpatients yearly, is a most useful addition to our teaching institutes, and its otologic, rhinologic, urologic and ophthalmologic classes are well known among the American physicians staying in Vienna. Furthermore the institute for physics has been opened recently and thus one of the oldest grievances of the students is done away with. The conditions in the old institute were really abominable. The new institute is intimately connected with the radium institute. On the same grounds with these two buildings a large modern chemical institute is being erected just now so that in a year's time it will open its doors to the students of medical chemistry.

Marriages

HARRY JACKSON WARNER, M.D., U. S. P. H. Service, to Miss Edmonia Gertrude Francisco of Cincinnati, December 21.

OSCAR LA BORDE, M.D., Columbia, S. C., to Miss Ellen Brooks Dunovant of Edgefield, S. C., December 5.

WILLIAM F. M. SOWERS, M.D., Washington, D. C., to Miss Mabel Dick of Lake Forest, Ill., January 1.

DAVID KIRK POLLOCK, M.D., Atlantic, Ia., to Miss Dorothy Winkelman of Jefferson, Ia., December 18.

HERBERT L. SMITH, M.D., to Miss Minnie Julia Huffstater, both of Watertown, N. Y., December 16.

ORTUS F. ADAMS, M.D., Segundo, Colo., to Miss Marion Easton of Valdez, Colo., December 13.

SIDNEY A. QUINN, M.D., Altoona, Pa., to Miss Mary G. Doyle of Hazleton, Pa., December 26.

WILLIAM NORMAN FERGUSON, M.D., to Miss Mary E. Powell, both of Philadelphia, October 16.

HOWARD T. KARSNER, M.D., to Miss Audrey Whicher Stanwood, both of Boston, December 12.

FRANCIS LEO QUIGLEY, M.D., to Miss Viola L. Savage, both of Wallace, Ida., December 16.

WILLIAM E. RISINGER, M.D., to Miss Blanche C. Linton, both of Dayton, O., December 4.

ISAAC MOORE, M.D., Alton, Ill., to Miss Lila Luckey of St. Louis, December 9.

Deaths

James Monroe Torrence, M.D. Jefferson Medical College, Philadelphia, 1873; a charter member, and for several years president, of the Indiana County (Pa.) Medical Society; served in Company K of the One Hundred and Fifth Pennsylvania Volunteer Infantry during the Civil War; for forty years a practitioner of Indiana, Pa.; die at his home in that city, December 16, following an operation for appendicitis, aged 67.

John William Sorrick, M.D. Medical College of Ohio, Cincinnati, 1875; a member of the Ohio State Medical Association; formerly a practitioner of Pleasant Valley and Krumroy, O.; a member of the One Hundred and Ninety-first Ohio Volunteer Infantry during the Civil War; died at his home in Kenmore, O.; December 15, aged 64.

Herbert Walter Morehouse, M.D. Rush Medical College, 1870; a member of the American Medical Association; chief surgeon and physician of the Wabash Employees Railway Hospital Association for more than twenty years; died at his home in Danville, Ill., December 19, from cancer of the esophagus, aged 68.

James Hanks, M.D. Bellevue Hospital Medical College, New York City, 1890; a member of the American Medical Association; president of the Adair County and North Missouri Medical societies; also a member of the judicial council of the Missouri State Medical Association from the sixth district; died at his home in Brashear, Mo., December 14, from apoplexy, aged 52.

William Standing, M.D. Missouri Medical College, St. Louis, 1871; for ten years a member of the faculty of the Physicians and Surgeons College and a former practitioner of Coulterville, Ill.; for twenty-seven years a practitioner in children's diseases in St. Louis; died December 15, from pneumonia, aged 66.

Rachel J. Davison, M.D. Cleveland Homeopathic Medical College, 1882; for thirty years a practitioner of Flint, Mich., and the first woman to be chosen a member of the school board in Michigan; trustee of the Union School District of Flint in 1894-5; died December 13, with dropsy, aged 62.

Douglas A. Swartz, M.D. Medical College of Ohio, Cincinnati, 1888; formerly of Canton, O.; a well-known practitioner of South Whitley, Ind.; died at the Hope Hospital in Fort Wayne, December 10, following an operation for the removal of a small growth of the nose, aged about 53.

Robert Hugh Moss, M.D. University of Louisville Medical College, 1891; Bellevue Hospital Medical College, New York City, 1894; a member of the American Medical Association; formerly of Niagara, Ky.; died December 15, aged 42.

Max Keiser, M.D. Niagara University Medical Department, 1895; a member of the Medical Society of the State of New York, and of the Buffalo Medical Society; died at his home in Buffalo and was buried, December 12, aged 49.

Albert Henry Winter, M.D. University of Southern California, College of Medicine, Los Angeles, 1906; a member of the Medical Society of the State of California; died at his home in Los Angeles, November 2, aged 34.

Lucius Cincinnattus Ward (license, Alabama, 1882); of Daviston, Ala.; a practitioner of Alabama for over thirty-five years; died at the home of his daughter in Anniston, Ala.; December 12, with heart failure.

Ernest Byron Smith, M.D. Cleveland Homeopathic Medical College, 1882; a member of the Erie County (Pa.) Medical Society; died at the Buffalo Central Hospital, December 11, from cancer, aged 52.

James J. Egan, M.D. College of Physicians and Surgeons, Chicago, 1906; an ambulance physician of the police department; died at the Cook County Hospital, December 22, from pneumonia, aged 31.

William O. Smith, M.D. Medical College of Ohio, Cincinnati, 1873; of Kinmundy, Ill.; a veteran of the Civil War; died at the Soldiers' Home, Quincy, Ill., December 20, from senile dementia, aged 75.

Grennville A. Emory, M.D. Albany Medical College, N. Y., 1867; a well-known physician of Orange County, N. Y.; died at his home in Middleton, N. Y., December 12, from locomotor ataxia, aged 74.

Eliza J. Beach, M.D. Homeopathic Hospital College, Cleveland, 1877; of Pasadena, Cal.; one of the first women in this country to enter the medical profession; died December 12, aged 77.

Eli Peck Miller, M.D. Bellevue Hospital Medical College, New York, 1864; one of the oldest physicians in New York; died at his home, December 19, from pneumonia, aged 84.

John H. Yeagley, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1878; died at his home in York, Pa., December 17, from pneumonia, aged 60.

Michael J. Gately, M.D. Georgetown University School of Medicine, Washington, D. C., 1872; died at his home in Baltimore, December 16, from apoplexy.

Jacob A. Hasemeier, M.D. Medical College of Ohio, Cincinnati, 1878; formerly of Louisville, Neb.; died at his home in Los Angeles, October 20, aged 63.

Vernon Justin Willey, M.D. University of Michigan, Ann Arbor, 1909; of Kalamazoo, Mich.; died at a hospital in Kalamazoo, December 7, aged 39.

Oscar O. Wolcott, M.D. Physio-Medical College of Medicine and Surgery, Chicago, 1896; died at his home in Bradner, O., October 13, aged 61.

Gerard Bailey, M.D. Medical College of Ohio, Cincinnati, 1868; of Rockford, O.; died suddenly at his home, December 9, aged 71.

Association News

ORTHOPEDIC SURGERY SECTION

Announcement of the New Section and Plans for the Minneapolis Session

The officers of the new Section on Orthopedic Surgery desire the cooperation of all members of the Association who are interested in this branch of surgery to the end that its first program which is to be presented at the Minneapolis session shall be an attractive and a practical one. The program is now being arranged and members who have ideas to advance or original methods of treatment to announce should address Dr. John Ridlon, 7 W. Madison St., Chicago, secretary of the Section, before April 1, 1913, and request a place on the program. All requests should be accompanied with the title of the paper proffered and an abstract of the paper not less than thirty or more than one hundred and fifty words in length, and an estimate of the time required to read the paper. Wherever it is possible to do so, applicants for a place on the program should submit the paper in full as well as this abstract to the officers of the Section so that the time at the disposal of the Section may be most advantageously allotted.

NEWTON M. SHAFFER, Chairman,
31 East Forty-Ninth Street, New York.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MICAJAH'S UTERINE WAFERS

A Chicago physician sends us a batch of advertising matter and a sample package of Micajah's Medicated Uterine Wafers. He writes:

"Another secret formula that performs the great wonders usual to the 'unknown.' I do not find this wonderful 'combination of several well-known, approved and time-tried antiseptic, astringent and alterative medicaments,' mentioned in New and Nonofficial Remedies. The only mention of some of the ingredients in the enclosed is found on page 2 of their advertising leaflet, 'Non-Surgical Gynecology'—'borate of sodium and alumen.' They quote fifteen doctors and two editorials to prove that secrecy, and their statements as to results, do great work."

As our correspondent says, there is no reference to this product in New and Nonofficial Remedies. He will find, however, several pages devoted to the nostrum in the Propaganda for Reform booklet. Micajah's Wafers were analyzed in the Association's laboratory and found to consist essentially of burnt alum, boric acid and borax in approximately the following proportions:

Alum, dried	59.86 per cent.
Borax, dried	15.62 per cent.
Boric acid	5.67 per cent.
Water of hydration	18.85 per cent.

These are the "well-known, approved and time-tried antiseptic, astringent and alterative medicaments" for which Micajah & Co., together with several testimonial-writers, claim so much. To quote from previous comments made by THE JOURNAL on this product:

"That a mixture of borax and alum may be of value in some of the simple ailments of the female genital tract can easily be granted. That relief might follow the use of suppositories made of these ingredients—especially when supplemented by an increased attention to simple cleanliness—can also be admitted. To say, however, that such medicaments will quickly and permanently cure gonorrhea, urethritis, endometritis, etc., is foolish, false and vicious."

In spite of the fact that the medical profession has been apprised of the fraud and deceit connected with its exploitation, this preparation is still advertised in several medical journals. Some of these are:

Medical Record	*New York Medical Journal*
Therapeutic Gazette	*American Journal of Surgery*
Medical Times	*Interstate Medical Journal*

RHEUMATICIDE

Inquiries have been received regarding the so-called Wallace treatment for rheumatism marketed by the Rheumaticide Company, New York City. It is advertised in the newspapers, and those who write for information are sent a booklet entitled "Rheumatism Cured" together with a circular containing testimonials. The Rheumaticide Company is said to have for its president one George E. Burroughs, while Dr. Thomas A. Wallace is referred to in the company's advertising matter as its "consultant," and a Dr. James C. von Spiegel, it is claimed, administers the nostrum in New York City.

Some of the claims made for this nostrum are:

"It is the only treatment that cures."
"Gout, Lumbago, and Sciatica promptly and permanently cured by our treatment."
"The only bona-fide cure for rheumatism."
"No treatment can permanently arrest and cure Rheumatoid Arthritis, Arthritis Deformans or chronic Gouty Arthritis, except our treatment."
"The Wallace Treatment neutralizes the toxins and kills the germs, thus effecting a permanent cure."
"The Wallace Treatment . . . is absolutely up-to-date."
"No specific treatment for rheumatism, worthy of the name, had ever existed until the introduction of our remedy."

Many other statements equally false appear in the Rheumaticide booklet. The booklet of testimonials carefully avoids giving the name and address of the individuals supposed to have been cured.

Contrary to the common run of "patent medicines," Rheumaticide is for hypodermic use and is supposed to be administered by a physician. The stuff comes in sealed tubes, each tube containing enough of the preparation for one "treatment" and costing $2.50. The Association's chemists examined Rheumaticide and reported as follows:

A sealed tube containing a preparation called Rheumaticide was received. The tube contained about 1 gm. (15 grains) of a dark brownish-red, viscid liquid, which had an odor like iodin and somewhat like phenol (carbolic acid). The quantity of material was so small as to preclude anything more than a cursory examination, but a titration with tenth-normal sodium thiosulphate indicated the presence of about 9 per cent. of free iodin; a determination of the total iodin indicated the presence of about 40 per cent. From this it was concluded that the essential constituents of Rheumaticide are uncombined iodin and iodin-phenol with traces of hydriodic acid. A preparation obtained by mixing the following was found, after standing twenty-four hours, to have properties quite similar to those of Rheumaticide:

Carbolic acid	2 parts
Glycerin	4 parts
Iodin	4 parts

And yet the exploiters of Rheumaticide call their nostrum a "serum" and inveigh against the use of drugs in this disease! For example:

"Drugs—confessedly useless even by those who prescribe them."
"It relieves the pain rapidly, but the relief thus obtained, unlike that from drugs, is permanent. . . ."
"Introduces no substances foreign to the economy."

In short, the exploitation of Rheumaticide is merely an impudent attempt to foist a nostrum on the public with the aid of such physicians as are willing to become partners to such a scheme. The annual report of the counsel to the Medical Society of the County of New York for 1911 stated that the Rheumaticide Company was found guilty of practicing medicine and that a fine of $250 was imposed.

KOSINE

"What," asked a correspondent, "is Kosine, made by the Kosine Company of Washington, D. C., and sold as a cure for epilepsy?" No examination of "Kosine" has been made in the Association laboratory. According to an analysis by the New Hampshire State Board of Health (*New Hampshire San. Bull.*, October, 1909, p. 138) Kosine contains antipyrin 0.64 per cent., ammonium bromid 4.97 per cent., and sodium bromid 2.4 per cent. From this it appears that "Kosine" is similar in composition to many other "epilepsy remedies" on the market.

Correspondence

American Society for Physicians' Study Travels

To the Editor:—The German Central Committee for Physicians' Study Travels, an organization that recently visited a number of the leading medical centers of the United States in connection with its attendance on the Congress on Hygiene and Demography at Washington, D. C., in September, 1912, was organized with the avowed object of visiting institutions in foreign countries by making a trip to but one of these countries annually. The committee does not confine its studies and observations to medical universities and colleges, but also aims to obtain information regarding purely scientific, hygienic and municipal institutions, as well as historic places of leading interest, model department stores and manufactories. On the basis that only one country is visited each year and that everything in the way of entertainment and scientific and practical demonstrations is arranged for in advance, it is found that much valuable information is gained, not to speak of the pleasure that is afforded by such a tour.

In view of the fact that a large number of American physicians make an annual pilgrimage to foreign shores in quest of medical and scientific knowledge, the newer methods of dealing with sanitary problems and a more intimate acquaintance with the leading health resorts, it has been deemed timely to organize an American Society for Physicians' Study Travels on the plan of that described above, which has been in existence for a period of fourteen years abroad. To this end, a local committee composed of nine Philadelphia physicians has been formed, as you mentioned in THE JOURNAL, Dec. 21, 1912, page 2268. This committee proposes to invite the assistance and cooperation of well-known members of the medical profession throughout the United States and Canada, especially those holding college and university professorships, and representatives of the medical service of the United States Army, Navy and Marine Hospital Service, as well as heads of state and municipal health departments, believing that the only feasible plan by which the movement can be made truly successful is to have every part of the country, every medical center, and all the chief professional interests of America, represented in the membership of the organization. In this way the local committee shall endeavor as a preliminary step to form a general committee of arrangements not to exceed 200 members, from which an executive body composed of a number to be determined will later be chosen. No physician shall be eligible to membership who is not a member of a county medical society.

Having been assured by the president and secretary of the German Central Committee for Physicians' Study Travels that a body of American physicians similarly organized would be accorded a warm welcome in Germany and other foreign countries, it would seem to me that neglect of so great opportunities for combining the acquisition of practical knowledge and health-giving recreation would be unwise.

This is not the time to state either the aims or advantages of such an organization in an ambitious form. With regard to the question of the benefits conferred by the proposed society, however, it is not saying too much to express the hope that in addition to increasing our positive knowledge of medicine, surgery and the specialties, such visits might lead to the formation of new and truer conceptions of medical education, to

fundamental changes in the conduct of health departments, both municipal and state, and to clearer ideas regarding the sphere of usefulness of leading foreign health resorts. It is also confidently believed that not only will the advantages offered be greater, but, if properly conducted, the cost per capita will be much less than if a single individual were to make a similar tour.

The organization would, therefore, work to the decided advantage of the individual members of the profession. Full information will be sent to THE JOURNAL just as soon as the committee on organization shall have completed its task.

J. M. ANDERS, M.D., Chairman,
1605 Walnut Street, Philadelphia.

The Safety-Razor Blade as a Scalpel

To the Editor:—As I have been using safety-razor blades in surgery for three years, I was interested in the article in THE JOURNAL, Dec. 14, 1912, p. 2127. The handle portrayed is an improvement over mine. The use of these blades was suggested to me by Dr. J. T. McDonald of Honolulu. When he was bacteriologist to the territory of Honolulu, he used blades to secure "snips" from those suspected of having leprosy. It came about in this way: Certain people contended that the physicians of the department of health were transmitting the disease by "snipping" different persons with the same knife. Of course, the knife had always been sterilized, but this did not satisfy the objectors. To do away with this prejudice, the law was made that every knife should be destroyed after a "snip" had been made with it. Dr. McDonald then hit on the idea of using the safety-razor blade and found it cheap and ideal for the work.

J. C. O'DAY, M.D., Portland, Ore.

[COMMENT.—Subsequent to the article referred to by our correspondent, another communication on the same subject appeared (December 28, p. 2325). In this Dr. Falker showed that no additional or specially devised handle or holder was necessary in order to use safety-razor blades as scalpels. In this connection it may be of interest to remark that nurses and interns use safety razors to shave patients whom they are preparing for operation, for childbirth, etc. They find it convenient to use a blade once and then throw it away.—ED.]

The Prevalence and Mortality of Cancer

To the Editor:—In examination of the subject of the prevalence and mortality of cancer two points seem of interest to me which I have not seen treated in the literature of the subject.

First, it will be noted that since the disease is to a great degree confined to ages beyond 40 and since this is the age at which women commonly cease to bear children, it must follow, I think, that the prevalence of the disease will be to a very slight extent influenced by the process of natural selection.

While this is true of women it is not to so great a degree true of men, and examination of age incidence and relative frequency of the disease in the two sexes, by those better equipped for the work than I, may cast light on the degree to which characteristics transmit along lines of sexes rather than more broadly.

Finally, is not this an explanation of the fact that a disease which has up to the present been of so high a mortality has been unable to eliminate itself, no matter how strong the factor of heredity may be?

HENRY POWER, M.D., Spokane, Wash.

Grave of Jane Crawford, the First Subject of Ovariotomy

To the Editor:—The Kentucky Medical Society has been trying to find the grave of Jane Crawford, on whom Dr. McDowell performed his first operation for ovariotomy.

I am glad to say that I have found the grave in the Johnson Cemetery ten miles northwest of this city. It is marked by a small marble slab.

Jane Crawford, I believe, was the widow of Thomas Crawford, and came to this county with her son, the Rev. James Crawford, a Presbyterian minister, who owned a farm at that time just across the road from the cemetery. His wife, who died April 4, 1852, is buried near his mother.

I remember the Rev. James Crawford, for he was a frequent visitor in my father's home—the late Dr. John J. Thompson of this city—and I think he died at Sunrise, Iowa. His son Alexander was in Sullivan and visited my father some time in the eighties.

The secretary of our county medical society, Dr. J. B. Maple, is preparing a history of the medical profession of the county and has collected some very interesting facts as far back as 1817; but I consider this one of the most interesting that we have discovered.

W. N. THOMPSON, Sullivan, Ind.

[COMMENT.—After the preceding letter was in type, a letter was received from Dr. J. R. Hinkle, Sullivan, Ind., reporting a visit to the cemetery and enclosing a photograph of the gravestone. In addition Dr. Hinkle says: "None of the descendants is living in this locality at this time. There are relatives living in Iowa who are old enough to remember their grandmother. I have not their address at this time, but can procure it if you desire."—ED.]

Grave of Jane Crawford, the subject of McDowell's first ovariotomy. The inscription on the tombstone is as follows:

JANE CRAWFORD
Died
Mar. 30, 1842
Aged 78 Years
Blessed are the dead who die in the Lord

Defense of Friedmann's Treatmeat for Tuberculosis

To the Editor:—It is only with the greatest hesitancy and decidedly against my own preference that I am addressing you in regard to two editorial comments in THE JOURNAL of Dec. 14, 1912 ("Friedmann's Inoculation Against Tuberculosis," p. 2158, and "Responsibility of the Newspaper," p. 2159). But as I am the brother of Frederick Franz Friedmann of Berlin, whose ethics you assail in the above mentioned issue, and as I have been a member of the American Medical Association for many years, I believe it to be my privilege, and my duty at the same time, to come to the rescue of one who is too busy and too far away to defend himself.

As to the "secrecy" of the process by which virulent live bacilli are made avirulent without losing their vitality, and which "secrecy" you call not in accord with the ethical

standard of scientific medicine: can you only see unethical motives in such withholding? Without knowing much about it, I can easily conceive of the possible dangers from an early publication of the methods employed. I can also quote one of the greatest authorities in Germany, Professor Orth, who as president of the Berliner medizinische Gesellschaft declared that any possible blame for incompleteness of my brother's publication ought to be charged to him (Orth), because he had to cut short Dr. Friedmann's paper on account of its being read ahead of previously announced ones.

A question I should like to ask is, What else could my brother have done in order to satisfy your ideal of ethics? He worked painstakingly for over ten years on a treatment and, finally believing that he had found it, reported it at the meeting of the most ethical body of physicians of his country, laying before them the results of his investigations, corroborated by a number of unassailable professional men who had cooperated with him and had observed his results, describing to the society the instances of success and failure along the different lines of tuberculosis, condensed as the limited time required.

The failure to immunize guinea-pigs successfully was fully stated; the point was made by Orth that the animals lived three times as long as those not treated, but finally succumbed to tuberculosis. Discussing this feature with some of the most eminent investigators of tuberculosis, I found that our views coincided, namely, that we find not infrequently a great variance of results in animal and man, and that we should not make too hasty conclusions from analogy.

It is true that we have no definite proof that injections will prevent tuberculosis in children. Question: What would you call proof of such prevention? We have, however, an instance in which injection was made in one of von Pirquet-positive twins; the one inoculated is living to-day and the other one died of tuberculosis.

It is hard to understand how you can state to your readers that the remarks in the discussion proved that no better results were obtained from Friedmann's injections than from tuberculin, when we read in the *Berliner medizinische Wochenschrift* that one physician, Dr. Karfunkel, stated that from his observations on hundreds of patients so treated, "he would no longer consider any other treatment of pulmonary tuberculosis than Friedmann's." And in another place in the same journal, we read that in over two hundred cases of pulmonary tuberculosis the discussing physician did not see a single one that did not react in a most favorable way on this treatment.

The possible reversion to virulence is certainly a danger to be considered; but do you not think that its approach would have been symptomatically noticeable in that number of cases in the length of time elapsed since the first injection? And do not forget that in the discussion of November 17 the point was brought out clearly that this particular strain of tubercle bacilli never was virulent at any time.

Instead of an attitude of critical neutrality and judicious skepticism which you advise, I should suggest one of expectancy for further details as to methods and results—theoretical and clinical—in the hope that the new treatment may prove to be a step forward in combating a hitherto almost unconquerable disease.

Concerning your second article, I remark:

No one can possibly detest and abhor the sensationalism of the lay press more than I do. In this particular instance I am the victim of it myself. Interviews with me are printed everywhere in the country, though they are entirely without substance or foundation of truth; but what would happen if *I* stated so in print? Could I not be accused with much more justification of advertising myself? This letter to you is the only one which I ever wrote to a publication of any sort in regard to my brother's treatment, and I hope that it will remain the only one. Every day I receive many letters and telegrams—a consequence of involuntarily getting my name in the paper in connection with my brother—and in many cases politeness and sympathy for sufferers demand an answer. My usual reply is that the treatment is not yet obtainable in the United States. I trust that such answer is permissible from an ethical point of view. [Note added on reading the proof: I wish to state that since writing this letter I published a few remarks in the *Colorado Springs Gazette* of December 22.]

I do not think that it is justifiable for you to say that there is "no scientific evidence for heralding this so-called consumption cure." A lot of indisputable scientific evidence in proof of good results has been offered, and as far as the "so-called consumption cure" is concerned, I have not heard or read of any scientific man branding it thus except yourself.

ARTHUR C. H. FRIEDMANN, M.D.,
Colorado Springs, Colo.

[COMMENT.—So far as our correspondent makes an argument for secrecy in scientific communications, we leave it to our readers to judge whether he has presented sufficient reason for violating the well-established ethics of scientific men. Secrecy here always raises the suspicion of commercialism; one cannot read F. F. Friedmann's paper (*Berl. klin. Wchnschr.*, Nov. 18, 1912, p. 2214) and the discussion following it, as published in the German medical journals (*Berl. klin. Wchnschr.*, Nov. 18, 1912, p. 2214; also *München. med. Wchnschr.*, Nov. 19, 1912, p. 2395), without having that suspicion strengthened. From one statement in Friedmann's paper the impression is gained that still other secret preparations are in reserve. Friedmann says: "Moreover, it is possible by intermittent treatment with certain specific bacillary *products prepared by me* [italics ours] to overcome definitely the specific hypersusceptibility by a purely subcutaneous method" (Uebrigens gelingt es auch, die specifische Ueberempfindlichkeit auf rein subcutanen Weg, nämlich durch intermittierende Behandlung mit gewissen specifischen, von mir hergestellten Bacillenprodukten, definitiv zu brechen).

Whatever may be the reason, the process of Friedmann was not disclosed at the meeting of the Berlin Medical Society, and it still remains a secret.

Two classes of physicians took part in the discussions. Those of one class were extremely enthusiastic for the remedy—and experience has shown that the overenthusiastic findings of the advocates of a new remedy or method must always be taken at a discount—those of the other class were decidedly conservative. Among the former was Karfunkel. Shall we look to him for a true estimate of the value of this remedy, or shall we look to such a conservative man as Blaschko? The latter said he observed little result from Friedmann's method in tuberculosis of the skin, while he saw favorable temporary results from tuberculin. Schwenk was unable to confirm Friedmann's claims in tuberculosis of the bladder, and Katzenstein stated that he had seen quite as good results in surgical tuberculosis from tuberculin as Friedmann had described.

Our statement that the results do not seem better than those obtained by tuberculin is warranted by the opinions and facts disclosed by the discussion and, until more convincing evidence is produced, we see no reason for retracting our statement. Meanwhile the proper attitude toward this new form of an old method, which has received such great publicity, is one of healthy skepticism. Wait and see!

So far as our editorial, entitled "Responsibility of the Newspaper," (THE JOURNAL, Dec. 14, 1912, p. 2159) is concerned, we said nothing to indicate that we believed Friedmann responsible for this newspaper sensationalism, although we are of the opinion that most physicians who read Shepherd's letter gained the impression that he must have been in close touch with either Friedmann or his assistants.—ED.]

Wiley for His Old Position

To the Editor:—Now that the druggists are remonstrating against Dr. Wiley being chosen for the position of secretary of agriculture, and that the present administration has appointed a successor as chemist, would it not be the proper thing for the American Medical Association as a body to use its influence to have him restored to his former position when the new administration comes into power?

W. A. WISEMAN, M.D., Camargo, Ill.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIONIN IN CATARACT

To the Editor:—1. Please give me the consensus of opinion as to the use of dionin in absorption in the incipient stage of cataract. When and by whom was it first used? 2. Dionin has been prescribed for a patient of mine by a prominent oculist and the result of its use has been most painful. She was told that it would cause her eyes to smart and burn for a while after using it, but that this would wear off shortly. This, however, has not been the case—on the contrary, the use of it has caused the most decided pain and inconvenience. During the week prescribed by the oculist for the use of the drops in the eyes she was not able to use her eyes at all, and the pain is just as severe now as when she first used the dionin in the eyes—five months ago. Can you tell me whether this is unusual or not? B. L. D.

ANSWER.—1. The use of dionin in the early stage of senile cataract of the ordinary type dates from its first introduction by Wolfberg, under the name "peronin," which he described in the third volume (1889) of the *Wochenschrift fur Therapie des Auges*. Later, when Merck introduced ethyl-morphin hydrochlorid under the trade-name of dionin, displacing the benzyl-morphin hydrochlorid, or peronin, Wolfberg and others experimented with the new remedy in almost every disease to which the human eye is heir. Solutions (5 per cent. to saturation), as well as the powder, were applied to the conjunctival sac for the dispersion of lenticular opacities. Darier ("Thérapeutique Oculaire") early employed this remedy and believed that it was valuable, at least as an adjunct to other cataract absorbents. Casey A. Wood in his "System of Ophthalmic Therapeutics" (p. 759) expresses the belief that the most effective method of employment is by subconjunctival injection, but that it is extremely doubtful whether this remedy or any other has much effect in delaying the progress of the usual forms of senile cataract. Dionin is generally regarded as one of the most valuable analgesic remedies we possess for the relief and curative treatment of corneal ulcer, acute glaucoma, iritis, scleritis and other inflammatory disease of the uveal tract. The relief given to the pain in most cases is prompt and complete. It may be used hypodermically (as an adjunct to atropin) but is commonly employed as a collyrium in 5 or 10 per cent. solution, or as a powder applied to the conjunctival sac. The greater the edema of the conjunctiva set up in this way the more decided is the analgesic action of the agent.

2. There are few recorded ill effects from its local use, even when the conjunctivae and lids are much swollen, or when the saturated solution or the powdered drug has been employed at intervals for a long period. Any departure from this result may be regarded as an idiosyncrasy on the part of the patient or from the use of the drug in improper cases—although any serious therapeutic complication is rare. In other words, there is little or no danger from its use even in large doses.

ASPIDOSPERMIN

To the Editor:—Please describe "Aspidospermin" and its use in the treatment of asthma, as suggested in a discussion in THE JOURNAL, Sept. 28, 1912, p. 1165.

CHARLES L. WILLIAMS, M.D., McMinnville, Ore.

ANSWER.—Aspidospermin is one of a number of alkaloids found in *Aspidosperma quebracho*. Others are aspidospermatin, aspidosamin, hypoquebrachin, quebrachin and quebrachamin. Evidence concerning the action of these individual alkaloids is somewhat conflicting. In general they are said to produce nausea, salivation, increased secretion of mucus in the respiratory tract, depression and alternately rapid and slow pulse. Large doses often cause symptoms of central nervous stimulation, tonic contractions and convulsions. The failure of the respiration is the cause of death in mammals, the heart continuing to contract for some time longer. None of these alkaloids is very poisonous. Commercial "aspidospermin" is a variable mixture of all the alkaloids of quebracho along with other bodies. It is sometimes prescribed in doses of 1 to 2 mg. (1/60 to 1/30 grain). Quebracho and also the alkaloidal mixture, aspidospermin, have been recommended for dyspnea from pulmonary disease, especially in emphysema and asthma. It is still mentioned frequently along with lobelia and similar drugs, but to judge from the standard works discussing asthma it does not seem to be highly regarded. The evidence that quebracho is of value is meager. Quebracho (aspidosperma) was at one time contained in the United States Pharmacopeia, but it was dropped from the eighth revision.

IRRITATION OF EYES BY PETROLEUM FUMES

To the Editor:—I have had a number of cases of irritation of the conjunctiva caused by exposure to the gas or vapor arising from crude oil, in men working in the Standard Oil Company's refinery here. The symptoms are intense burning, lacrimation and photophobia, with congestion of the conjunctiva.

1. Is there any specific for such cases? What treatment would you advise?

2. Is there any value in picric acid for such cases? What strength should be employed in the eyes? I have read that it is good in burns of the conjunctiva by lime, etc.

3. I have been using 4 per cent. cocain to relieve the burning, and have been washing with boric acid and applying hot compresses. Is there anything better that could be used?

HOWARD A. GALLUP, M.D., El Segundo, Cal.

ANSWER.—1. It is difficult to advise any effective treatment of eyes whose (irritative) symptoms are due to a constant exposure to the fumes of crude petroleum. The best plan would be to have the men wear closely fitting goggles, and to have them foment their closed eyes with very cold water, followed by the instillation of a saturated solution of boric acid. These applications should be made three or four times a day, or oftener if needed.

2. Picric acid would not be of much avail; it is generally used in cases of actual burns on the eyeball or lids.

3. It is not proper to use cocain in these cases; it is only temporary in its action, and in the long run is pretty certain to damage the cornea and to make the patient worse.

LITERATURE ON SEA-WATER TREATMENT

To the Editor:—Please give dates of issues of THE JOURNAL containing articles relative to treatment by use of deep-sea plasma or sea-water. S. L. KISTLER, M.D., Los Angeles, Cal.

ANSWER.—Some articles on treatment with sea-water were published as follows:

Le Boutillier, T.: Sea-Water Treatment Given by Subcutaneous Injection with Results Obtained in Children, *Arch. Pediat.*, May, 1909; abstr., THE JOURNAL, April 17, 1909, p. 1277, with discussion.

White, C. J.: Injections of Sea-Water in Skin Diseases, *Boston Med. and Surg. Jour.*, July 29, 1909; abstr., THE JOURNAL, Aug. 14, 1909, p. 589.

Le Boutillier, T.: Sea-Water Treatment Given by Injections, THE JOURNAL, Jan. 1, 1910, p. 26.

Maclean, J. C., and Harston, L.: Toxemia of Uncertain Origin and Its Treatment by Sea-Water Injection, *Lancet*, London, Aug. 5, 1911; abstr. THE JOURNAL, Sept. 2, 1911, p. 849.

The following articles, not abstracted in THE JOURNAL, may be referred to:

Carpenter, J. W.: The Hypodermic Sea-Water Treatment of Disease, *Woman's Med. Jour.*, June, 1910.

Merrick, R. M.: Therapeutic Use of Sea-Water in Infants, *Arch. Pediat.*, August, 1910.

SALVARSAN IN VINCENT'S ANGINA

To the Editor:—Recently I saw a foreign abstract in THE JOURNAL which stated that salvarsan used locally for Vincent's angina, Riggs' disease, noma and ptyalism gave excellent results, but the author failed to state how and in what strength he used it. Please give details of the treatment. W. D. BLACK, M.D., St. Louis.

ANSWER.—The authors, Charles Achard and M. G. Desbouis, treated the case of Vincent's angina which they report with a preparation of 0.2 gm. of salvarsan in from 6 to 8 c.c. of glycerin, applying it to the ulcerations three times a day. It is not quite clear from the statement whether or not the whole of this amount was applied at each treatment. They say further that the application of salvarsan in powder is harmless as well as simple. They advise in applying the powder to saturate the cotton which is used to make the application with glycerin previously to dipping it in the powder. They state that these applications can be repeated several times a day. Zilz (*München. med. Wchnschr.*, Jan. 2, 1912, p. 20) applied the remedy in a 10 per cent. water or glycerin solution, or suspended in a fixed oil (oil of sweet almonds, sesame oil, olive oil or liquid petrolatum).

ECHINACEA

To the Editor:—What is the present therapeutic standing of echinacea? I frequently receive literature from proprietary manufacturers who ascribe great value to their echinacea preparations. S. H. B.

ANSWER.—Echinacea was considered by the Council on Pharmacy and Chemistry, and was rejected on the ground of insufficient evidence for its therapeutic efficiency. The report appeared in THE JOURNAL, Nov. 27, 1909, and was subsequently published in the Reports of the Council on Pharmacy and Chemistry for 1909, page 144. It also appears in "The Propaganda for Reform," seventh edition, p. 38. The concluding paragraph of this report is: "In view of the lack of any

scientific scrutiny of the claims made for it, echinacea is deemed unworthy of further consideration until more reliable evidence is presented in its favor." So far as we can learn, no reliable evidence for the claims made for the drug has been presented since this report was made by the Council.

INJECTION TREATMENT FOR HEMORRHOIDS

To the Editor:—Where can I get information on the injection treatment for hemorrhoids? What is the preparation of ergot used by some specialists in the injection treatment for hemorrhoids? They seem to be very successful, and if possible, I should like to learn how to treat (by above method) a case or two of hemorrhoids in patients who are not fit subjects for an anesthetic and the radical operation. I have used the phenol (carbolic acid) injection and do not like it. JOHN P. BERSON, M.D., Southwest City, Mo.

ANSWER.—The injection treatment of hemorrhoids is described in the various works on diseases of the rectum and anus; a list of standard works was given in THE JOURNAL, Oct. 9, 1909, p. 1205. Phenol is the agent usually employed. The only reference we find to the use of ergot is the statement that in the Rorick system the formula for the injection fluid is:

Phenol	4 parts
Glycerin	8 parts
Fluidextract of ergot	4 parts
Water	8 parts

THE NORMAL STOMACH

To the Editor:—Kindly answer the following questions for me:
1. What is the capacity of the average normal stomach?
2. How would this capacity and size be determined post mortem?
3. Please give method of preserving the stomach so that it will retain its size and shape. C. E. P.

ANSWER.—1. Average from one to two quarts (one to two liters).

2. By tying the orifices and filling with water or other liquid.

3. Inflate with air and dry. The shape of the stomach varies with its degree of fulness and the tone of its musculature. A strong stomach partly filled with food presents the so-called cow-horn shape. An atonic stomach when full is more or less distended like a bag. Moderate degrees of atony give the fish-hook form. It is doubtful whether an inflated and dried dead stomach can correctly represent the form of the living stomach in the body.

MAGNESIA MIXTURES

To the Editor:—I have been unable to find the formula for Tyson's alkaline solution, used in tests for phosphates in urine. Please supply the formula or tell me where the solution can be obtained. My druggist cannot find it in the local market.

A. BURSELL, M.D., Eugene, Ore.

ANSWER.—Probably the solution referred to is the magnesia mixture used in the precipitation of alkaline phosphates. This mixture is given in Tyson's work on urinalysis as follows:

Magnesium sulphate and ammonium chlorid, of each	1 part
Distilled water	8 parts
Pure liquor ammoniae	1 part

The official magnesia mixture given in the U. S. Pharmacopeia is made by dissolving 10 gm. of magnesium sulphate and 20 gm. of ammonium chlorid in 80 c.c. of water and adding 42 c.c. of ammonia water.

SARCOMA SERUM

To the Editor:—What is the serum used for sarcoma and where can it be obtained?

A. J. BENEDICT, Newburg, N. Y.

ANSWER.—The serum referred to by our correspondent is probably erysipelas and prodigiosus toxins (Coley), prepared by Parke, Davis & Co., Detroit. See New and Nonofficial Remedies, 1912, p. 221.

MUNICIPALITY LIABLE FOR TYPHOID IN WATER

Charles H. Higgins, Ottawa, Canada: The Supreme Court decision, affirming the liability of a municipality for damages because of typhoid in the drinking-water furnished by that municipality, was abstracted at length in THE JOURNAL, Jan. 7, 1911, page 65.

THE FRIEDMANN TREATMENT FOR TUBERCULOSIS

Dr. H. A. Schirrmann, Portsmouth, Ohio: See THE JOURNAL, Dec. 7, 1912, page 2081; December 14, page 2158, 2159 and 2192; and also the Correspondence department of this issue.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

SCHOOL INSPECTION IN RURAL COMMUNITIES

Dawson, Minnesota, is a little town of 1,318 people. The Dawson *Sentinel*, the only paper published in the town, has a weekly circulation of 1,200. Not a very large town or a very important publication, if viewed simply from the point of view of size. In these days of cities of millions of people and of great dailies whose circulations run far into the hundred thousands, Dawson and the Dawson *Sentinel* would not seem very large to the casual observer. Yet it is of just such towns that our rural population is composed, and it is by such papers that a large share of the public sentiment in our country is molded. The editor of the *Sentinel*, in addressing his 1,200 subscribers, has a marked advantage over the editorial writer for the great city daily. He probably knows personally nearly every person to whom his paper will go. And they know him, and his views have a personal value that can never be attained by the impersonal utterances of the editorial writer on the great metropolitan publications.

In a recent issue the Dawson *Sentinel* tells its readers why, for their own sakes and their children's sakes, they should favor medical inspection of schools. The editor is not addressing an impersonal or abstract audience. He is speaking to his friends and neighbors about his children and their children, most of whom he probably knows by name. He wants to see sickness kept out of his own home and the homes of his friends. He tells his readers in plain, forceful words how this can be done. And this, in part, is what he says to them:

"It is one of the anomalies of civilized society that it extends greater protection to pigs than to babies. The government, state and national, spends money to investigate hog cholera, but refuses to provide means for detecting and checking maladies that afflict children of the human species. So accustomed have we become to estimate values in the term of dollars that we accord to pork protection which we deny to potential manhood and womanhood.

"And what is the result? We are producing splendid pigs, wretched men. . . .

"It has been scientifically established that most diseases result from childhood neglect. Children from all sorts and conditions of homes meet in the democracy of the public schools. The result is inevitable: soon 'the best is like the worst.' . . .

"By the way, do you know who occupies the seat in school in front of or behind or beside your boy? Is he clean? Is he healthy? Are you sure that no members of his family are afflicted with contagious disease? It may be that his throat is spotted with diphtheria; . . . that scarlet fever is being shed from his hands. He may be itchy, his body may be covered with foul sores, transmissible to your boy.

"*Do you know anything about it? Do you care a hang?*

"It is a fact that most diseases originate in childhood; that many of them are acquired from schoolmates; that nearly all of them can be cured if detected. Regular medical inspection would, if it became universal, stamp out disease in a few years; in schools it would prevent the spread of epidemics, stop incipient chronic ailments, encourage care of the body, and reduce childhood mortality to a negligible minimum.

"This is not written to help the doctors. In fact, the course here recommended would spoil a lot of business for the doctors. There is less money for them in prevention than in treatment.

"The agitation for medical inspection should come from the people and not from the medical profession.

"Hitherto medical inspection has been had only on the order and at the expense of local authorities. The result is that inspection has been tried in a few communities only. In order to make it general, some means of compulsion must be devised. Some law must be enacted that will make it cheaper for school districts to have physical examination of pupils, than not to have it. To this task the present progressive state legislature should address itself.

"Our system of state aid makes the task comparatively easy. Already conditions are imposed on the schools receiving such aid, requiring certain standards of sanitation to be maintained. Why not add medical inspection as another condition? Surely it would be for the common interest that unhealthy children be barred from the public schools, and it is the duty of the legislature to enact such legislation as will promote the common good.

"There has been agitation for rural consolidation, for a more efficient education, for higher ethical and intellectual standards. With this agitation the *Sentinel* is in sympathy. But it is a fact, scientifically established, that the physical is at the basis of the ethical and the intellectual, and that there is little hope of advancing morally a race handicapped by physical degeneracy.

"Medical inspection in the public schools would reduce child mortality and increase manhood vitality. It would in a score of years all but stamp out disease; and with disease it would banish crime and poverty. It would usher in an era of well-being. The physical foundation of the nation would be strengthened. Man would more nearly approximate the divine ideal of a being made in the image of his Creator!"

Society Proceedings

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-Fifth Annual Meeting, held at Old Point Comfort, Va., Dec. 17-19, 1912

The President, DR. J. M. T. FINNEY, Baltimore, in the Chair

Intestinal Obstruction, with a Clinical Study of One Hundred and Eighty-One Cases

DR. ALEXIUS MCGLANNAN, Baltimore: The form of operation required in any given case must depend on the nature of the obstruction and on the presence or absence of complications. Thus we group the operations performed into three classes, namely, relief of the obstruction, excision of intestine, and enterostomy. In order to judge the efficiency of any of these operations it is necessary that the procedures be compared with regard to the stage of the disease at which the operation is performed. This is the only logical basis for study of the treatment of obstruction, and avoids the confusion of many classes as to causation, differences in position of the obstruction, and variations in the completeness of the occlusion. Each of these factors alters the rapidity of development and the duration of the three stages of the disease; consequently a study of intestinal obstruction from the point of view of the symptomatology and treatment of these stages balances the relation of the various factors and makes the comparison of operative statistics possible.

Thirty-four patients were treated in the first stage; all recovered. Of these 12 were relieved of their symptoms by enemas and purgatives. The other 22 were operated on; in 15 the obstruction was relieved; resection was performed in 3 cases; enterostomy with short-circuiting and enterostomy with relief of obstruction once each. Simple enterostomy was done twice. Relief of the obstruction, therefore, is the best operative procedure in cases treated during the first stage. When provision has been made for a delayed enterostomy, this is the best procedure in postoperative obstruction, probably because opening the previously brought-up loop gives no operative shock. Sixty-five patients were operated on in the second stage; 55 recovered; 11 of these died as a result of a second operation or some complication developing later than one week after the original operation. The operations performed were as follows: relief of obstruction, 44, 6 fatal; short-circuiting, 2; excision, 14; enterostomy, 4; enterostomy with other operations, 15. One patient was relieved by an enema. Gangrene was present in 10 cases; 2 patients were treated by anastomosis and excision; 8 patients recovered; 6 were resected. Relief of the obstruction seems the best operation in the second stage, provided gangrene has not developed. In the presence of gangrene resection is the best operation, provided the constitutional symptoms are not pronounced. In the latter event, enterostomy should be added to the resection, or if the condition of the patient is grave, the loops may be brought out of the abdomen and packed off with gauze, with an enterostomy above the obstruction.

Eighty-two patients were operated on in the third stage; 52 died. Relief of the obstruction was done in 22 per cent. of the cured and 34 per cent. of the fatal cases; enterostomy, and relief in 22 per cent. of the cured, 8.5 per cent of the fatal; simple enterostomy in 45 per cent. of the cured, 32 per cent. of the fatal, and enterostomy with other operations in the remaining cases, 3 cured and 9 fatal. Resection was done in one fatal case, and extrusion in two others. One patient was relieved by an enema and 5 died without operation. Gangrene was present in 15 cases, 2 cured and 13 fatal. In both the cured cases enterostomy and excision were done.

In the third stage, enterostomy should be done, either alone or in connection with the other procedures. In the non-gangrenous cases enterostomy was done in 77 per cent. of the cured and in but 41 per cent. of the fatal cases.

DISCUSSION

DR. JOSEPH C. BLOODGOOD, Baltimore: The essayist is the first to publish a large number of cases showing the importance of the effect of washing out the stomach and of giving enemas to aid in the early diagnosis of intestinal obstruction, a thing always neglected outside of the hospital, and often neglected in the hospital, namely, the importance of the stomach-tube and enema in the differential diagnosis. In going over my cases years ago I was surprised at the difference between the mortality of cases of intestinal obstruction taking place in the hospital and those outside of the hospital. Those in the hospital have been subjected to operation, and, therefore, are not considered good operative risks, yet the mortality from postoperative obstruction is much less than it is outside, owing to the early recognition of the obstruction, and in the majority of cases early diagnosis has been made by the use of the stomach-tube and enema.

DR. HENRY T. BYFORD, Chicago: One point in the treatment which it is necessary to consider, and one which involves the early diagnosis, is whether the obstructed intestine is going to result in gangrene or some permanent injury, or whether the patient can be carried along for a while without any resulting injury. In postoperative cases in which there is a kink in the intestine or adhesions sufficient to cause paralysis, and we are in doubt as to whether there is really an obstruction or adhesions sufficient to cause paralysis, if we can introduce two or three quarts of fluid into the system, we may be able to carry the patient over a week or more, so that there will not be any gangrene, as in a case of volvulus, intussusception or hernia; this explains why patients get along better in a hospital than outside of such an institution.

DR. JOHN YOUNG BROWN, St. Louis: The importance of draining the distended loop of bowel above the obstruction cannot be too strongly accentuated. A number of years ago, in a paper before the Mississippi Valley Medical Association, I reported a series of cases in which I resected the gangrenous intestine, and described a method of draining the loop of intestine above the obstruction. I cut across the bowel, introduced a tube into the bowel, and while an assistant was handling the bowel above, the resection was made without losing any time. The use of the stomach-tube and rectal-tube, both before and after operation, is of exceeding importance.

DR. ERNST JONAS, St. Louis: Early operation in cases of intestinal obstruction by a poor operator is preferable to a late operation by the most experienced surgeon. The physician should be warned about giving cathartics by mouth if there is any doubt as to intestinal obstruction. Cathartics in these cases aggravate the condition. If enema and lavage do not relieve the patient, preparations for operation should be made.

DR. I. S. STONE, Washington, D. C.: Purgatives not only do harm, but they are rarely indicated. With the use of physostigmin (eserin) and enemas, properly given, I have never seen a purgative necessary. Since we have been using that combination I have never found a secondary operation

necessary, when that simple method of treatment has been properly tried, when the conditions were not most formidable.

DR. JAMES E. MOORE, Minneapolis: I wish to emphasize the axiom laid down long ago by Greig Smith, that the distended bowel should be relieved by making an opening into it.

DR. SAMUEL J. MIXTER, Boston: Looking back on the fatal cases of intestinal obstruction, it will be found that death occurred in those cases in which the intestine had not been emptied, or when an anastomosis had been done immediately and the septic contents of the occluded intestine had been poured into the lower intestine. Abbe pointed out that the intestine below is starved and ready to take up the material poured down from above, and in that way a rapid and fatal sepsis ensues.

DR. CHARLES H. MAYO, Rochester, Minn.: In the past year, in cases of intestinal obstruction, we have in four cases through the appendicostomy incision been able by drainage to overcome the immediate obstruction.

DR. JOSEPH RANSOHOFF, Cincinnati: I would call attention to the use of the *x*-ray in locating the obstruction in acute cases. Outside of hospitals that is out of the question, but when a patient is brought into the hospital it takes but a short time to obtain an *x*-ray picture, and in three recent cases the obstruction was located by this means.

DR. ROBERT T. MORRIS, New York: For a year or more I have been using injections by rectum of bismuth solution, also using it by the stomach as far as possible, and then employing the fluoroscope, in this way determining definitely the seat of the obstruction.

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: I would call attention to enterostomy as a temporary measure in saving the patient's life. I did four enterostomies last year, in three of which the patients required no secondary operation. They were all saved.

DR. H. A. ROYSTER, Raleigh, N. C.: If we have retention of scybalous masses, and the bowel is gripped on something and cannot release itself, if the intestine is much distended and the patient is vomiting, with little or no pain, we can give a few doses of physostigmin, say 1/40 grain of the salicylate, every two or three hours, until two or three doses are given, to be followed by an alum enema. If the patient is in great pain, we can give 1/100 grain of hyoscin, to be followed two hours later by an enema. With this treatment we have found that some patients did not need operation at that time, and operation could be safely done later, while other patients did not need operation.

DR. J. M. T. FINNEY, Baltimore: I have used appendicostomy after the method mentioned by Dr. Mayo in eight or ten cases of intestinal obstruction; in my experience it does all that Dr. Mayo says it does, and it is a valuable aid in those cases in which the obstruction is low down. The indiscriminate use of physostigmin is followed by disastrous results. My attention has been called to the fact by Dr. Abel of the pharmacologic department of Johns Hopkins that eserin under ordinary circumstances has a marked depressing effect. In one case it apparently had a very alarming effect. In one or two others it was followed by marked symptoms of depression, but its withdrawal was followed by decided improvement.

DR. RUFUS B. HALL, Cincinnati: I should like to emphasize the point made by Dr. Brown in reference to draining the intestine above the seat of obstruction in those cases in which it is thought best at the time of the operation to resect the intestine. I have used the method advocated by Dr. Brown in a number of cases with satisfactory results. I have seen a number of cases in which there was depression following the administration of physostigmin, and I usually give it in no larger doses than 1/40 grain.

DR. RANDOLPH WINSLOW, Baltimore: Neither physostigmin nor any other agent is going to relieve a patient when the intestine is mechanically obstructed, and there is nothing to do but to operate. Physostigmin can do good only in cases in which the bowel is not mechanically obstructed.

DR. HENRY O. MARCY, Boston: The earlier we operate in cases of intestinal obstruction the better. The lives of many patients are lost by delay. When the diagnosis is made, it is not only important to determine to operate, but how soon to do so.

DR. J. WESLEY BOVÉE, Washington, D. C.: I have been using physostigmin as a routine in all cases after operation ever since Dr. Craig of Boston brought it to the attention of the profession. It never fails to produce a bowel movement in a case in which there is no intestinal obstruction.

DR. W. W. CRAWFORD, Hattiesburg, Miss.: I have personal knowledge of a patient who was given 1/50 grain of physostigmin by mistake, and who was greatly prostrated by it, so that for two or three hours death seemed imminent; nevertheless, the patient did not die. Another patient, a clergyman to whom I administered 1/40 grain of physostigmin on the second or third day after the operation, told me that he felt as if a stick of dynamite had exploded within him.

DR. GORDON K. DICKINSON, Jersey City: The diagnosis of intestinal obstruction is so uncertain in many instances, that to wait until it is made definitely would be to wait until it may be too late to do any good. It is better to go in and tap the intestine, and if necessary, give saline solution subcutaneously, and resort to such other measures as may be demanded.

DR. ROBERT MILNE, London, England: It was very fashionable in the London Hospital to give physostigmin, but now it is only the extreme cases of distention that respond to the use of the drug. We give not more than 1/100 grain at a dose, and not more than three such doses. I cannot say that in any of our cases we have noticed any particular collapse from the use of the drug.

DR. O. L. ELBRECHT, St. Louis, related some experiments with physostigmin on normal individuals. He found that small doses had absolutely no effect in many instances, whereas larger doses gave prompt action of the bowels. He found that it was usually twenty minutes to half an hour before it acted.

Increase of Newer Abdominal Surgery Due to Increase in Toxic Disturbances

DR. ROBERT T. MORRIS, New York: Cobweb adhesions in the attic of the abdomen belong to the toxic group of manifestations, and we are learning a great deal concerning how these toxic impressions lead to the formation of adhesions in cases without an acute inflammatory onset. In some instances bacteria penetrate the wall of the bowel. The endothelium is shed as a result of their presence and the lymph which exudes becomes disorganized and forms permanent adhesions that are common in the region of the cecum, largely in the region of the sigmoid, and largely in the region of the pylorus and the bile tract. Why are we having more abdominal surgery relating to Lane's kink, to Jackson's membrane and to cobwebs in the attic of the abdomen, than we ever had before? For answer, let us turn to the statistics which are being collected by the Equitable Assurance Association of New York. This company finds a rapid increase in insanity, and a rapid increase in the number of cases of arteriosclerosis. It finds a rapid increase in the number of cases which belong to the stage of decadence. When we have arrested development as a result of the decadent change that is now taking place in all the civilized nations in our present cultural period, we find physical defects or stigmata classified by psychiatrists increasingly in evidence.

What are we going to do about it? Surgery has a place in a number of this group of cases and can afford much help, but the other part of the question relates to a better development of individuals in the race. It is a question which is not under the control of the surgeon, but belongs to the physiologist and eugenist; surgery, I believe, is very important in that it will require an increasingly higher degree of skill on the part of the surgeon decade after decade, and will require him to be more alert and better able to analyze cases than he has been able to do before. There will be more Jackson membranes, more Lane's kinks, and more adhesions than before, owing to the increasing toxic conditions which belong to the decadent stage of our cultural period.

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Fractures Into and About Joints

DR. CHARLES E. CALDWELL, Cincinnati: The subject of fractures is too perfunctorily taught. A clearer understanding of their nature and complications would bring about better results and obviate many lawsuits. Fractures into and about joints require more discriminating diagnosis and treatment than the average fracture of the shafts of long bones. Crepitus is valuable, and its absence significant. Perfect apposition of fragments is of more consequence in proximity to joints.

DISCUSSION

DR. RANDOLPH WINSLOW, Baltimore: I have had a number of cases of fracture of the surgical neck of the humerus, and have found it impossible in some cases to effect reduction until the arm was drawn into a position of extension and the bones held together by means of screws; I have had some good results by that method.

DR. A. A. LAW, Minneapolis: In the University of Minnesota we have a different procedure and our results have been different from those related by Dr. Winslow. We resort to the treatment suggested by Maxwell and Ruth in old persons rather than let them be up and about, with the prospect of a deformed joint and a lack of function of the joint. One woman, aged 87, and another 92, have functionating joints and union by following the Maxwell-Ruth method. This method in the old is attended with uniformly good results.

DR. ROBERT T. MORRIS, New York: In cases in which an open operation is not advisable, in selected cases, a simple operation may often be done. The limb is put behind the fluoroscope, a narrow-bladed knife run down near the fracture, a cannula put in, a drill run through the cannula and both fragments transfixed and a silver pin is run in and left there, everything else being taken out. A whole lot of fractures can be pinned behind the fluoroscope with the patients under the influence of cocain. The patients need not be kept in bed after operation. This method does away with the disadvantage of keeping these patients in bed. In many cases of fractures in joints you can put in a pin and do a simple operation.

Experimental Anatomic and Physiologic Observations Bearing on the Total Extirpation of the Colon

DR. AUGUST SCHACHNER, Louisville, Ky.: When we consider the arrangement by which twenty or more feet of small intestine are being supported through a peritoneal attachment measuring 5 inches, the weakness of the abdominal wall in the inguinal region and the hernias that result from the gravitation of abdominal contents against this lowest and weakest point, we realize the disadvantages of the upright position. These become all the more apparent if we compare the darkened lungs of the human subject with the clean pink lungs of the quadruped living under the same condition, as a proof of how unequal the cilia are in their efforts to lift the dirt and bacteria-laden mucus against gravity, and when we watch the pathetic efforts of the tuberculous subject to raise his expectoration against gravity.

Arbuthnot Lane and Elie Metchnikoff deserve credit for calling the attention of the world to the injurious effects of intestinal stasis.

While the end-to-end anastomosis is functionally the most natural, the end-to-side has the advantage of more security and practically the same advantages that apply to end-to-end. Our experimental work justifies us in believing that when an ileorectostomy, or ileosigmoidostomy is made by the lateral method, the intestinal contents do not pass through this opening as a rule, but continue the natural course through the colon, provided no obstruction exists. In other words, it is a repetition of what occurs in the stomach after a gastroenterostomy with a patulous pylorus.

Few of us perhaps realize that the retroperitoneal position of the kidney, when making excursions, enables it to dissect loose through attrition the peritoneal attachment that serves to anchor the viscera to the vertical column.

I wish to emphasize that the problem is comprehensive enough to accept all the assistance it can through gymnastics, bandages, regulation of diet and habits, and still furnish an abundant percentage of human wreckage, as Mr. Lane expresses it, for the surgeon to attempt to reclaim.

Complete Physiologic Rest of the Large Bowel in Ulcerative and Obstructive Lesions

DR. JOHN YOUNG BROWN, St. Louis: Complete physiologic rest of the entire large bowel is valuable in the treatment of certain diseases of this organ which have heretofore been treated by some of the surgical methods; later the bowel can be put back into commission in a manner both safe and satisfactory.

Through a right rectus incision sufficiently long for general exploratory purposes, the abdomen is opened. The cecum is at once sought and the large bowel is carefully examined from cecum to sigmoid. All pericolic adhesions are then severed, the appendix removed and the stump buried. The ileum is next severed between two clamps, close to the ileocecal valve. The distal ileum is tied off and buried as was the appendix. At a suitable part of the cecum, a purse-string suture of linen is placed and the cecum is next incised. Through this incision a large rubber catheter is inserted, after which the purse-string is tightly tied. A second purse-string of No. 1 chromic catgut is next placed. Under the loops of this purse-string, three long catgut fixation sutures are placed. A stab-wound is next made at McBurney's point through which a forceps is inserted. The catheter and fixation sutures are grasped in the bite of this forceps and pulled through the stab-wound. The peritoneal surfaces of the cecum surrounding the catheter are next scarified and the catheter is pulled through the stab-wound, carrying with it the three fixation sutures. The catheter is now slipped through the button and the fixation sutures are threaded through the eyes in the button and tightly tied, thus closely approximating the serous surfaces of the cecum to the parietal peritoneum. A stiff rubber drainage-tube is next inserted into the proximal ileum and fixed with a double purse-string suture. The ileum is now brought out at the lower angle of the rectus incision. The parietal peritoneum is made to hug it snugly by a few catgut sutures, and the abdominal wound is closed in the usual way. The indications for restoring the continuity of the large bowel are improvement of the patient's general condition and the return to normal of the discharge from the excluded large bowel, as shown after repeated chemical, microscopic or cultured growth examination of irrigation fluids passed through it. This restoration should not be made too early, particularly in the ulcerative lesions of the colon. When the surgeon deems that the large bowel has sufficiently healed and desires to put this organ back into commission, this restoration is readily done by simply cutting out the anus at the lower angle of the rectus incision, closing its end with a purse-string suture, and making a lateral anastomosis of ileum to ascending colon or by switching the ileum into the sigmoid. We have never found any difficulty in restoring intestinal continuity. On the contrary, the operation is simple and easy.

This paper is based on the experience we have gained from ten cases in which this operation has been performed. Two were cases of chronic intestinal stasis, with obstructions due to pericolic bands and flexures. Both patients have greatly improved and are now comparatively well. Three operations were done for the relief of amebic dysentery. All patients were cured. One was a case of ulcerative colitis with extensive involvement of the sigmoid and rectum. Patient is now in good health. One was a case of extensive obstructive tuberculous colitis. This patient received great relief from the operation and lived in comfort for two months. Three were for late and inoperable malignancies of the rectum. One lived six months, one five months, and the third patient is still living, nine months after operation, is comfortable and in reasonably good health; so there was no mortality in the series.

DR. JOSEPH C. BLOODGOOD, Baltimore, discussed the surgery of the colon, with special relation to the methods of resection and suture.

(To be continued)

PHILADELPHIA PEDIATRIC SOCIETY

Joint Meeting with New England Pediatric Society, Section on Pediatrics of New York Academy of Medicine and New Jersey Pediatric Society, held at Philadelphia, Nov. 12, 1912

The President, DR. THEODORE LE BOUTILLIER, in the Chair

Treatment of Hemorrhagic Disease of the New-Born

DR. BETH VINCENT, Boston: The recent use of serotherapy in this condition has marked a distinct advance in the treatment. A new method of treatment has been applied in the form of blood transfusion and by the subcutaneous injection of animal serum, human serum and whole human blood. The results show such a high percentage of recoveries as to justify the assumption that the use of the blood or its derivatives by these various methods is of therapeutic value in this disease. In every one of eleven cases treated the immediate effect was to check the bleeding and correct the anemia. The only exception to the rule of easy convalescence was in a case with extensive hemorrhage under the scalp. Eight of the eleven patients were cured; four died, one of a diffuse peritonitis, undoubtedly present and undetected at the time of the operation; another of syphilitic infection one month after the operation; a third was moribund at the time the transfusion was done. Four additional patients not treated by transfusion were given injections of whole human blood. In two of these the bleeding took the form of intracranial hemorrhage and in two of melena neonatorum. The fatal results could not fairly be taken as evidence that this method was ineffectual, since three of the patients were moribund at the time of the injections. Several patients in this series received animal serum subcutaneously without apparent result and were subsequently cured by transfusion.

Without justifying the statement that animal serum is wholly ineffective, this confirms the opinion that human blood or its derivatives is more valuable in these cases. The good results which have been obtained from the use of human blood is sufficient evidence that these measures are efficacious in checking the bleeding in this condition. Transfusion seems the ideal method because it restores directly to the infant's circulation all the elements needed for coagulation. Transfusion also possesses the advantage of correcting the anemia by replacing the cellular elements which have been lost by hemorrhage. Hence this is the only method from which good results can be expected in the severe types of the disease in which the patients have been exsanguinated by continuous profuse bleeding. The best line of treatment to pursue in these cases is a rational combination of all three methods. In cases beginning with a trivial hemorrhage and seen early, the easier and more simple methods of blood or serum injection are in order. It may be advisable to make the first injection of whole blood to save delay and at the same time to collect enough blood to furnish serum for further treatment. Cases which do not follow so favorable a course or in which the patients are exsanguinated in the beginning are better treated by transfusion. When transfusion is performed one may leave the case with the assurance that the infant is in no immediate danger. There are two forms of this disease which are not affected by transfusion. The first includes those cases in which the underlying cause of the bleeding, as bacterial infection, syphilis and ulcers of the stomach or duodenum, is such as to be fatal in itself, and the second class comprises cases of hemorrhage of the brain, adrenals, kidneys and liver in which the location and extent of the bleeding is the vital factor. With these exceptions the human blood or its derivatives is capable of checking the bleeding, and by a proper application of one or a combination of these methods, a large percentage of patients in this hitherto fatal disease may be cured.

Pyloric Obstruction with a Comparative Study of the Normal Stomach of Infants

DR. GODFREY R. PISEK, New York: There are certain cases which exhibit the classical group of symptoms, projectile vomiting, steady wasting, constipation and excessive stomach peristalsis, in addition to palpable nodular tumor in the pyloric region. Cases are reported without the presence of any palpable tumor, and it is these that offer the greatest difficulty in determining the method of procedure and in how far they may be surgical. By the use of the Roentgen ray one may determine whether there shall or shall not be operation in a given case. Comparative studies are made on normal infants, breast-fed and artificially fed. It is evident that the accepted conception of the shape and activity of the infant stomach needs revision. The normal stomach begins to empty itself within a minute or two after the intake of food. This fact is used to differentiate cases of pyloric obstruction in which the food, in cases of true stenosis, escapes very slowly and through an extremely narrow lumen, while in cases of pylorospasm it takes from twenty minutes to half an hour before the bismuth passes into the duodenum.

DISCUSSION

DR. EDWIN E. GRAHAM, Philadelphia: I should like to know whether a sufficient number of cases have been examined to make it possible to decide definitely whether a small portion of the stomach contents passes into the duodenum within one or two minutes after the bismuth has been introduced into the stomach. Is it possible that the amount of fluid introduced into these stomachs was excessive? If this is true, the portion leaving the stomach can hardly be affected by the gastric secretion.

DR. FRITZ B. TALBOT, Boston: In some cases it is impossible to obtain skiagrams of these babies. In these cases I give the baby subnitrate of bismuth by mouth. This agent is crystallizable and can be readily observed microscopically in the stools. Absence of typical bismuth crystals from the stools means that no food is passing through the pylorus.

DR. HARRY LOWENBERG, Philadelphia: I saw one case of pyloric obstruction in which the bismuth shadow did not show beyond the spinal column. A tumor was palpable. The diagnostic value of the administration of charcoal should be emphasized. If this substance passes through, the prognosis is hopeful, whether the condition is a hypertrophy, a spasm or a mixed condition. Another case sent to me as pyloric obstruction was found by *x*-ray methods to be a case of twist in the sigmoid, and the vomiting was probably reflex. There are certain dangers connected with the use of the stomach-tube in these cases. In one case the tube could be palpated in the right iliac fossa and a skiagram with the tube *in situ* showed that the lower border of the stomach had been pushed down.

DR. HENRY L. COIT, Newark, N. J.: The abuse of a saturated solution of borax, so generally used in washing out infants' mouths, is sometimes, if not often, to blame for the occurrence of pyloric spasm, stenosis and even gastric ulcer.

DR. J. FINLEY BELL, Englewood, N. J.: The point should be emphasized that the absence of tumor at the pyloric region does not necessarily indicate that there is no obstruction present.

DR. WALTER LESTER CARR, New York: There are certain cases of pouched stomachs in which the peristaltic wave appears to the left of the median line. Many of these cases are in infants fed artificially and cannot be classified as cases of pyloric spasm or pyloric obstruction, although showing a reversed peristaltic wave.

DR. GODFREY R. PISEK, New York: In the normal stomach the contents invariably begin to pass through within a few minutes of their ingestion. In cases of pyloric tumor or pyloric spasm the meal remains in the stomach for some time, and this fact is a helpful point in diagnosis. In cases of pyloric obstruction in which there is no tumor palpable, it might be that no bismuth is extruded for half an hour, and then, in cases of pyloric spasm, it will gush through. This is an aid in making a prognosis in these cases. In artificially fed babies the stomach contents appear to pass readily through the pylorus. The point which Dr. Talbot made regarding the use of bismuth subnitrate is a good one. It might be used when no skiagrams are available, but it would only show that something could pass through the pylorus.

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Book Notices

HEREDITY AND EUGENICS. A Course of Lectures Summarizing Recent Advances in Knowledge in Variation, Heredity and Evolution, and Its Relation to Plant, Animal and Human Improvement and Welfare. By William Ernest Castle, John Merle Coulter, Charles Benedict Davenport, Edward Murray East and William Lawrence Tower. Cloth. Price, $2.50 net. Pp. 315. Chicago: University of Chicago Press, 1912.

This is a reproduction of a course of lectures delivered at the University of Chicago under the auspices of the biologic departments. The first two chapters, by Professor Coulter, give a clear and readable statement, mainly from the point of view of a botanist, of current conceptions concerning the principal evolutionary theories and the physical basis of heredity. The next four chapters, on the "Method of Evolution" and "Heredity and Sex," by Professor Castle, and on "Inheritance in the Higher Plants" and the "Application of Biologic Principles," by Professor East, are largely devoted to the application of Mendel's laws to experimental facts. Mendel's laws, though somewhat differently stated by various writers, are simple enough but they seem to require a large amount of exposition which has developed a voluminous literature and a rather extensive and somewhat confusing nomenclature. Of course the inheritance of acquired characters arises in the discussion of the mendelian heredity, and both authors deny such a possibility. There are some biologists of eminence who still hold to the possibility of such transmission, and at least some pathologic facts are most easily accounted for by it. Racial immunity to certain diseases is such a one; if it exists, it is acquired and must also be inherited, but whether through antibodies or hormones in the blood or through modification of the germ-plasm itself, makes no material difference. There may be some other explanation for such facts, but if there is it does not naturally suggest itself. Professor Tower, in a chapter on the "Modification of Germinal Constitution of Organisms," takes up this subject of somatic and other influences on the germ-plasm, and while not so positive in his statements he also inclines to question the possibility of acquired characters. The conditions, however, which he lays down for the satisfactory settlement of the question, have certainly not been met by any experiments as yet reported. In his closing remarks he says that "there is little reason to expect that present biochemical methods can give a solution," and that it is not improbable that we shall have to wait till the solution of the larger question as to what life is before it will be possible to define the nature of the germinal changes. That, in spite of the assumptions of a recent much-talked-of address, is probably like Hans Breitman's party, "away in the *Ewigkeit*." Perhaps, as Tower says, too much attention has been given to the chromosomes, and we shall have to look further back to the internal secretions, not merely of the ductless glands, but of many other if not all the organs and tissues of the body for the factors of heredity. If so, that will be the end of the present eminence of the germ-plasm in biologic speculations.

The last two chapters of the work, by Dr. Davenport, on the "Inheritance of Physical and Mental Traits," will be the most interesting to the average reader. They deal strikingly with the problems of practical human eugenics. The argument is, of course, to some extent *ex parte*; environment has also to be taken into account in any judicial estimate of mental and moral eugenics. The brief catalogue of the eminent descendants of Elizabeth Tuttle does not include Aaron Burr, and doubtless many black sheep can be found in any family line. The man who said he would rather be the son of a healthy burglar than of a consumptive bishop, if he could have a good bringing up, was not strong in his pride of ancestry, but he was not altogether wrong, though he took only a one-sided view of the eugenics problem.

A general impression left with one who cannot claim to be a biologic expert, from the perusal of this work, is that the problems of heredity are exceedingly numerous and complex, notwithstanding all the work that has been directed toward their solution. The practical problems of human eugenics, however, are coming more and more to the fore and the medical profession will have to take its part in meeting them. This book will be found useful in giving as full and clear a statement of views commonly held now on the general subject of genetics, as is likely to be obtained elsewhere without the reading of a large amount of non-medical scientific literature.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY. By Robert Holmes Greene, A.M., M.D., Professor of Genito-Urinary Surgery, Fordham University, and Harlow Brooks, M.D., Assistant Professor of Clinical Medicine, University and Bellevue Hospital Medical School. Third Edition. Cloth. Price, $5 net. Pp. 639, with 339 illustrations. Philadelphia: W. B. Saunders Company, 1912.

As in many other text-books of recent issue, the authors "have attempted to devote the greatest amount of space and the fullest description to those methods and conditions which have appeared to them to be of the greatest importance." While a book on such a plan cannot fail to prove of value, it can hardly be said to be satisfactory to the student or student-practitioner who wishes to inform himself fully on the subject. The association of an internist and a surgeon in the authorship is a good one because the text thus represents every subject from the two points of view. The practical experiences of the authors and the conclusions drawn from them are well detailed. Descriptions of methods are supplemented by illustrations, as in the case of cystoscopy, for instance. Only four lines of text supplemented by seven illustrations, are devoted to tumors of the bladder. The same is true of stone in the bladder. Only fifteen pages are devoted to the collection and chemical and microscopic examination of the urine. It would be better to refer the reader to some good book on that subject and use the space thus gained to give a more detailed description of cystoscopy. So, too, one might criticize the amount of space given to anatomy and embryology. On the other hand, the treatment of diseases of the prostate, especially by massage and operation, is excellently presented, the principles of all operative procedures being discussed clearly and well. Other subjects are similarly well treated. In fact, little criticism can be made of the surgical side of the work. Evidently the medical side has suffered because not enough space was available for the full discussion of every subject.

The illustrations are especially to be commended. Most of them are line drawings, and therefore they are simple, clear and easily understood, without the possibility of misinterpretation. They really illustrate.

PLEURISY, INCLUDING EMPYEMA AND BRONCHIECTATIC CONDITIONS. By A. James, M.D., F.R.C.P.E., Consulting Physician to the Edinburgh Royal Infirmary. Cloth. Price, $2.25. Pp. 243, with illustrations. New York: William Wood & Co., 1911.

As the result of thirty years' experience in hospital and private practice, the author here sets forth his views on the subject of pleurisy. The book is made up of a series of pictures of the disease in its various forms, numerous case histories being used by way of illustration. There is little of the historic included and comparatively little of pathology, the emphasis being laid on the clinical manifestations of the disease and the treatment, and particularly the author's and not others' views on the subject. As etiologic factors the germs themselves are not so much regarded as their virulence and the susceptibility of their human host. Bacteria, in fact, are perhaps rather too briefly considered in this connection. The clinical features are clearly set forth and one must in general agree with what is described. One statement, however, appears rather odd and as not in accord with general experience. On page 65, referring to pain in pleurisy, the author says: "As regards degree, it is specially marked in purulent pleurisies, and indeed it may be said that if the pain of a pleurisy or pleuropneumonia is so intense as to require the ice-bag or morphin hypodermically, the process is fairly certain to be a purulent one." Surely many non-purulent pleurisies are seen that are extremely painful. Perhaps the most valuable part of the book for the practitioner—and the book is not well adapted to the needs of the undergraduate—is the author's experience with some of the rarer types of pleurisy, such as pulsating empyema.

ASSOCIATION TESTS. Being a Part of the Report of the Committee of the American Psychological Association on the Standardizing of Procedure in Experimental Tests. By R. S. Woodworth, Columbia University, and Frederic Lyman Wells. Psychological Monographs, Volume 13, No. 5. Paper. Price, $0.75. Pp. 85. Baltimore: Psychological Review Company.

The tests presented in this monograph are designed for practical application, without the employment of the usual laboratory instruments of precision. The whole report is divided into three parts, the first of which discusses the scope of the work, the second analyzes the mode of procedure for securing best results in association tests, while the third presents descriptions and illustrations of the tests in detail. The tests are the more or less familiar ones used by experimenters on children and adults, here collected and presented in something like a serial gradation. The first is the cancellation test, or following of instruction to cancel by a single downright stroke some symbol distributed in a group of dissimilars. The second series of tests centers about the associative control which is involved in simple addition tests. The third series involves the associative responses which appear in the reading of colors and arbitrarily chosen forms or designs. The fourth group, in turn, introduces the substitution tests, and the sixth investigates nine logical relations.

In general, this monograph represents a piece of work for which there existed a felt need, and while it was worked out with reference to college students, who ought to have greater facility in language associations than persons taken at random, and certainly more understanding than children, nevertheless some at least of these tests can be successfully applied in examining the associative powers of subjects of any grade of ordinary intelligence. From a purely academic interest it is desirable that they be expanded and standardized with larger representative groups of normal adults, and even as presented, they furnish an immediate practical service in assisting in the diagnosis of mental diseases which fall under the general name of psychoneuroses or functional disturbances of the mind that appear in the various forms of hysteria and neurasthenia.

PRACTICE OF OSTEOPATHY. Its Practical Application to the Various Diseases of the Human Body. By Charles H. Murray, A.B., B.D., D.O. Third Edition. Cloth. Price, $3.50. Pp. 422, with 121 illustrations. Elgin, Ill.: The Murray Publishers, 1912.

This is the third edition of a book which was criticized in THE JOURNAL several years ago (July 23, 1910, p. 335). In the previous review the scientific portion of the book, if it can be said to have any scientific part, was criticized, and the efforts on the part of the author to provide any adequate osteopathic treatment for various diseases were condemned. A few general statements were made regarding the arrangement of the contents. The publishers have taken these sentences and have used them so as to convey the impression of a recommendation of the book on the part of THE JOURNAL, following the well-known example of theatrical and other press agents. In order to prevent a repetition of such an occurrence, no comments will be made on the third edition. The reader is referred to the previous review for an opinion as to the scientific value of the book.

THE MECHANISTIC CONCEPTION OF LIFE. Biologic Essays. By Jacques Loeb, M.D., Ph.D., Sc.D., Member of the Rockefeller Institute for Medical Research. Cloth. Price, $1.50 net. Pp. 232 with 58 illustrations. University of Chicago Press, 1912.

This contains essays written in response to requests for popular presentations of the results of Loeb's investigations. The general object has been to present in a simple fashion the chief results of studies in the attempt to analyze phenomena of life from a purely physicochemical point of view. All the essays have been published previously. The topics discussed are as follows: the mechanistic conception of life; the significance of tropisms for psychology; fundamental facts and conceptions concerning the comparative physiology of the central nervous system; pattern adaptation of fishes; some facts and principles of physiologic morphology; the nature of the process of fertilization; the nature of artificial parthenogenesis; the prevention of death of the egg by fertilization; salts in the preservation of life; the influence of environment on animals. All who are interested in following the stimulating and suggestive work of this genial investigator will be thankful to have these essays in convenient form.

CHILDREN: THEIR CARE AND MANAGEMENT. By E. M. Brockbank, M.D., F.R.C.P., Honorary Physician, Royal Infirmary, Manchester. Cloth. Price, $1.50. Pp. 259. New York: Oxford University Press, 1912.

This little book, written for "newly qualified doctors and for mothers and nurses," is necessarily so simple and elementary that it is of little interest to the "doctor." The "mother and nurse" will find the book of interest, especially because the author has the happy faculty of expressing himself in simple and clear language. It has no advantage, however, over many other books that have appeared on this subject in the last ten years and in many instances is less abreast of the times. One is rather startled to find the author recommending in the last page of the book a "first-aid box," of his own device, naming the manufacturer and the price.

VORLESUNGEN ÜBER DIÄTBEHANDLUNG INNERER KRANKHEITEN. Gehalten vor reiferen Studierenden und Ärzten. Von Prof. Dr. H. Strauss, Direktor der Inneren Abteilung des jüdischen Krankenhauses in Berlin. Mit einem Anhang "Winke für die Diätetische Küche." Von Elise Hannemann. Third Edition. Paper. Price, 8.60 marks. Pp. 479. Berlin: S. Karger, 1912.

The fact that within four years this book has passed through three editions, the last extensively revised, is evidence of its intrinsic value. It is composed, in the main, of sixteen lectures intended for advanced students and physicians, together with extensive tables on chemical composition, salt content, caloric value, etc., of the various foods. An appendix of nearly 100 pages contains hints for the diet kitchen, recipes, etc., by Elise Hannemann. The book is preeminently practical, clear and concise and the authoritative position of the author assures its theoretical soundness.

INSOMNIA: ITS CAUSES AND TREATMENT. By Sir James Sawyer, Consulting Physician to the Queen's Hospital, Birmingham. Second Edition. Cloth. Price, 2 shillings, 6 pence net. Pp. 107. Birmingham: Cornish Bros., 1912.

This little book was widely read in the first edition. It is now offered with additions and emendations. It is a sane and practical presentation of the subject. The author classifies cases of insomnia into two large groups, symptomatic and intrinsic; the former are due to pain, coughing, dyspnea and various other conditions, and the latter to psychic, toxic and senile conditions. A description of the symptomatology of these forms of insomnia is given and their causation and treatment are fully discussed. Originally the book was made from the first two chapters of the author's "Contributions to Practical Medicine," and was reprinted from it.

INDUSTRIAL DISEASES. Proceedings of the Second Conference on Industrial Diseases. 1912. Paper. Price, $1. Pp. 417, with illustrations. New York: American Association for Labor Legislation, 131 East Twenty-Third Street.

This pamphlet contains nineteen papers on diseases of occupation, together with the discussions, presented at the Second National Conference on Industrial Diseases held in connection with the meeting of the American Medical Association at Atlantic City in June. The book contains a number of illustrations showing various protective devices used in manufacturing processes and an extensive bibliography of works on occupational diseases. It is a valuable publication on a subject that is receiving constantly greater attention from sociologists, the medical profession and the legislatures.

THE IMMEDIATE CARE OF THE INJURED. By Albert S. Morrow, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic. Second Edition. Cloth. Price, $2.50 net. Pp. 354, with illustrations. Philadelphia: W. B. Saunders Company, 1912.

Of the first edition of this work (1906) we wrote: "Although a large amount of useful information is to be found in this book we think it hardly comes up to the ideal set forth in the preface, inasmuch as the author has failed to make clear what may be done by the intelligent layman in cases of accident or injury, and what in such cases should be undertaken only by the physician." This criticism still holds good. We note that the author in revising has very properly omitted the chapter on hypodermic injection, but still recommends that antiquated abomination, the flaxseed poultice.

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Miscellany

Athletics for Girls.—That modern athletics may be indulged in with advantage by girls throughout childhood and school and college life is the net result of an inquiry made by Dr. Angenette Parry (*Am. Jour. Obst.*, September, 1912, p. 341). The inquiry was directed to obstetricians, college physicians, directors of physical training in universities or private gymnasiums, athletes, women circus riders and gymnastic performers. It included the functions of menstruation, parturition and lactation, and had reference to displacements or other pelvic injuries from athletic exercises. While there was considerable diversity of opinion, it was pretty generally agreed among those attempting to answer the inquiry that girls may indulge in athletic sports, games and pastimes to a considerable extent, but that perhaps the taking part in strenuous athletic contests, such as intercollegiate games, would be injurious or not conducive to the best interests of those participating. With some exceptions the opinions were that girls accustomed to athletics or those in good physical training might exercise without detriment during the menstrual period. In the majority of instances the menstrual flow is probably increased by such exercises on account of accelerated circulation and congestion, but in one instance of a circus gymnastic performer the menstrual flow was stopped during the period of exercise. None of these professional performers desisted from their exercises during this period, and in the case of horseback riders during pregnancy their work was kept up in some instances to the eighth month or beyond. In no instance was miscarriage the result of such exercises except in the case of a fall. As to the effect on parturition, among forty answers from physicians the general opinion was that the condition of athletic patients was much better. More than one-half believed that athletic exercise favors easy labor, though excessive exercise hinders it. Still others believed that among their athletic patients there were as many easy as difficult labors. One-fourth were decided in their opinions as to the increased dystocia due to athletic training. A few called attention to the rigidity of the perineum. Most observers agreed that convalescence after parturition was better in the athletic women, while as to the matter of lactation the observations were of little value. In regard to displacements, five out of twenty gynecologists believed that displacements can be caused by violent exercise, especially during the menstrual period; but the consensus of opinion was that athletic exercise did not produce displacements and it was recommended by some as a prophylactic against such a condition. Parry believes that girls should lead the same outdoor lives as their brothers, climbing, swimming, running and ball-playing, etc., without distinction as to sex, until puberty, and they will arrive in that first great epoch in their reproductive lives well prepared for the changes which then take place. Though the results of athletic exercises in all individuals will not result in producing hearts, lungs and muscles of the same caliber, yet physical exercise tends toward nervous stability and poise, and one of its great excellences is the training of the judgment and self-control of the individual, which leads to recognition by the young athlete of her powers and limitations, and ensures not only good physical endurance, but makes intellectual work easier and adds zest to all the activities of life. It is probable that athletics indulged in by the weaker sex moderately and under proper supervision is as appropriate and beneficial as for the male sex, and it is only the immoderate, strenuous and competitive athletics that needs any condemnation for either sex.

The Annual Meeting of the A. M. A.—Primrose . . . had just returned from a meeting of the American Medical Association in Atlantic City, and was full of his experiences. There was little conversation that night. It was all monologue. Primrose *loquitur*, with feeble gasps of assent or dissent from his audience: "Of course every properly qualified doctor in America should belong to the Association. These meetings are wonderful. They're a liberal education. Outside of national politics, and Washington, there's nothing like them. I've been to your Chautauquas and Church Triennials. They're froth and nursery tales in comparison. The generation just ahead of us did us a great wrong when they belittled the meetings of the A. M. A. I remember old Dr. Grimm's once saying to me, 'Don't be fooled by all this talk; and don't mix yourself up with that crowd. They're nothing but a parcel of advertisers.' Whatever they may have been once, they're primarily nothing of the sort now; and remember that the Association was started, and was run for years, as it is now, by our most representative men. The whole thing is certainly very well done to-day, and I'm always preaching to the younger men that they should never miss these meetings. Of course I'm an old country duffer, but I confess that I'm full of excitement and interest from the moment I reach the station platform. It's stimulating to see hundreds of men all bent on the same errand as one's self; it's delightful to meet dozens of old friends, and I confess that I often rejoice to shake the hand of some much-talked-of man from Europe who has come here to tell us what he knows. I always try to reach the convention twenty-four hours early, and I spend that free day going about among the men, watching the arrivals, and visiting the House of Delegates. That first evening fills me with delight as I sit in the corridor or smoking-room. What a chance to study types and character! You two seem to lose the human side of our annual meetings. You run on for an appointed day or hour, read the paper assigned to you, and then take a night train for home. You should go as I go, and see the thing through. So you get the spirit of the affair. You should visit the different sections and see what men are doing and thinking. Physiology and medicine are as important as chemistry and surgery. It gives one a thrill sometimes to hear a really big man read a truly great paper. I've had the experience twice. Last year, when Browning made his announcement of finding and destroying the cancer parasite, the house rose to him three thousand strong, and that, too, though it was the Section on Surgery which knew that the discovery meant a serious loss of business for them."—From "A Doctor's Table Talk" by Dr. James G. Mumford; published by the Houghton Mifflin Company.

A Great Work for the Profession.—In the detection of the false and the uncovering of fraud, a great work for the profession has been accomplished by the thorough investigation into the composition of these proprietary drugs carried on under the direction of the Council on Pharmacy and Chemistry of the American Medical Association, the results of which are published from time to time in its JOURNAL. Any physician desirous of obtaining a correct knowledge of the composition of these nostrums should consult the reports of the chemical laboratory of our sister association to the south of us. The publication, New and Nonofficial Remedies, is, I believe absolutely reliable, and should be in the hands of every physician. Let me also say that I think we should appreciate highly the proposition of the members of this council to institute a critical study of many of the important questions in therapeutics, which still demand investigation. It is proposed to make a compilation of all available published information on each question, and to supply this compilation to every member of our profession who will assist with careful clinical research. Later on they promise to furnish digests and monographs, giving the final results of their investigations, which will supply the physicians with facts on which some dependence can be placed. Such an effort should have not only our good wishes but also our active cooperation.—From the Address in Medicine at the forty-fifth annual meeting, by Dr. A. D. Blackader, in the *Canadian Medical Association Journal*.

Problem of the Defective.—The multiplying of the defective classes is the largest sociologic problem before the American people which must very soon invite the attention of our government, from the cabinet officer to the township trustee. Logically they will look to this association for matured advice and suggestions for procedure, after the census bureau has compiled the figures, and public conscience has compelled attention.—Hubert Work in *Am. Jour. Insan.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 14. Chairman, Dr. W. H. Sanders.

ARIZONA: Phoenix, January 6-7. Sec., Dr. John Wix Thomas.

COLORADO: State House, Denver, January 7. Sec., Dr. David A. Strickler, 612 Empire Building.

DISTRICT OF COLUMBIA: Washington, January 14. Sec., Dr. George C. Ober, 125 B Street, S.-E.

ILLINOIS: Coliseum Annex, Chicago, January 22-24. Sec., Dr. James A. Egan, Springfield.

INDIANA: Room 57, State House, Indianapolis, January 14-16. Sec., Dr. W. T. Gott, State House.

MINNESOTA: Pathological Institute, University of Minnesota, Minneapolis, January 7. Sec., Dr. Thomas S. McDavitt, Lowry Building, St. Paul.

NEW MEXICO: Santa Fé, January 13. Sec., Dr. W. E. Kaser, East Las Vegas.

NEW YORK: January 28-31. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH DAKOTA: Grand Forks, January 7. Sec., Dr. G. M. Williamson.

OKLAHOMA: Oklahoma City, January 14. Sec., Dr. John W. Duke, Guthrie.

OREGON: Portland, January 7. Sec., Dr. E. B. McDaniel, 702 Electric Building.

SOUTH DAKOTA: Watertown, January 8. Sec., Dr. L. G. Hill.

UTAH: Salt Lake City, January 6-7. Sec., Dr. G. F. Harding, 310 Templeton Building.

VERMONT: Montpelier, January 14-16. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Spokane, January 7-12. Sec., Dr. F. P. Witter, Traders' Block.

WISCONSIN: Milwaukee, January 14-16. Sec., Dr. John M. Beffel, 3200 Clybourn Street.

Oregon July Report

Dr. E. B. McDaniel, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 1-3, 1912. The number of subjects examined in was 15; percentage required to pass, 75. The total number of candidates examined was 104, of whom 55 passed, including 9 osteopaths, and 49 failed, including 7 osteopaths. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Cooper Medical College	(1912)	79
College of Physicians and Surgeons, Los Angeles	(1912)	79.1
University of California	(1911)	75
Denver and Gross College of Medicine	(1903) 83.3; (1910)	83.3
Denver Homeopathic College	(1904)	82.1
University of Colorado	(1912)	83.7
George Washington University	(1908)	76
Northwestern University Medical School	(1906) 75; (1911)	77.1
College of Phys. and Surg., Chicago	(1906) 75.6; (1909)	76.4
Rush Medical College	(1911)	80
Hahnemann Medical College and Hospital, Chicago	(1881) (1897) *70; (1911) 79.	*81.6;
Medical College of Indiana	(1879)	*50.5
College of Physicians and Surgeons, Keokuk	(1898)	*70.1
University of Kansas	(1912)	76.7
University of Louisville	(1910)	78.5
Kentucky University	(1901)	75
Harvard Medical School	(1893) 75.1; (1912)	82.5
University of Michigan, Dept. of Med. and Surg.	(1890)	70.8
St. Louis University	(1910) 77.4; (1911)	85.7, 86.3
Washington University, St. Louis	(1908)	82.4
American Medical College, St. Louis	(1903)	*70
Syracuse University	(1903)	82.9
Columbia University, College of Physicians and Surgeons	(1911) 77.4; (1912) 88.2.	
Starling-Ohio Medical College	(1911)	79.3
Willamette University	(1912)	79.1
University of Oregon	(1909) 81.5; (1912) 75, 76.5, 76.5, 79.9, 83.5.	81.1,
University of Virginia	(1910)	75
London School of Medicine for Women, England	(1901)	78.9
Non-graduate	75,	77.1, 78.2

FAILED		
University of Colorado	(1906)	71.5
George Washington University	(1908)	72.3
Hering Medical College	(1912)	72.5
College of Phys. and Surg., Chicago	(1894) 62.5; (1908)	71.7
Hahnemann Medical College and Hospital, Chicago	(1904)	66.8
Keokuk Medical College, College of Phys. and Surg.	(1906)	67.6
State University of Iowa, College of Medicine	(1910)	70.4
Kentucky School of Medicine	(1903) 68.1; (1908)	64.4
University of Louisville	(1907) 50.9; (1908)	68.1
Hospital College of Medicine, Louisville	(1907)	73.4
Ensworth Medical College	(1905)	56.4
St. Louis University	(1905)	52.4
Missouri Medical College	(1886)	63.6
Medico-Chirurgical College of Kansas City	(1906)	60.3
Kansas City Homeopathic Medical College	(1891)	61.5
Creighton Medical College	(1907)	68.8
Ohio Medical University	(1906)	73.4
University of Oregon	(1905) 70.5; (1911) 66.1; (1912) 65.6, 68.5, 71.4, 73.1, 73.7, 73.7.	
Willamette University	(1912) 62.3, 64.1, 66.8, 69.1, 69.8, 70.3, 71.5.	
Lincoln Memorial University	(1907)	71.2.
Non-graduates	50.8, 59, 63.7, 64.6, 65.3, 73.4.	

* Five per cent. allowed for each ten years of active practice after graduation.

Mississippi October Report

Dr. W. W. Smithson, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 22-23, 1912. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 25, of whom 13 passed and 12 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Total No. Examined
University of Louisville	(1912)	2
Tulane University of Louisiana	(1910, 2) (1912)	3
Memphis Hospital Medical College	(1901) (1909) (1911, 2) (1912, 3)	7
University of Tennessee	(1912)	1

FAILED		
Atlanta School of Medicine	(1912)	1
Maryland Medical College	(1911)	1
Meharry Medical College	(1907) (1911) (1912)	3
Memphis Hospital Medical College	(1911) (1912, 4)	5
University of Tennessee	(1912)	2

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
Louisville Medical College	(1871)	Missouri
University of Virginia	(1907)	Virginia

Oklahoma October Report

Dr. John W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Muskogee, Oct. 7-9, 1912. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 70. The total number of candidates examined was 31, of whom 23 passed and 8 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Little Rock	(1911)	80
Howard University, Washington, D. C.	(1904)	77
Atlanta School of Medicine	(1912)	75
Chicago College of Medicine and Surgery	(1912) 78	83
Drake University	(1912)	82
Northwestern University Medical School	(1892)	81
Flint Medical College	(1910)	74
Washington University, St. Louis	(1910)	79
St. Louis College of Physicians and Surgeons	(1912)	75
University of Oklahoma	(1912)	79
Jefferson Medical College	(1873) 74; (1906)	81
Vanderbilt University	(1912)	81
University of West Tennessee	(1907) 70; (1912)	71, 77
Meharry Medical College	(1903) 73; (1912)	79, 79, 80, 82
Fort Worth School of Medicine	(1912)	73

FAILED		
University of Arkansas	(1912)	67, 68
College of Physicians and Surgeons, Little Rock	(1910)	55
Rush Medical College	(1896)	68
Barnes Medical College	(1905)	71
Memphis Hospital Medical College	(1911) 61; (1912)	66
Meharry Medical College	(1909)	63

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
Reliance Medical College	(1909)	Kentucky
University of Tennessee	(1892)	Tennessee

Connecticut November Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written, oral and practical examination held at New Haven, Nov. 12-13, 1912. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 26, of whom 20 passed, 5 failed, and one withdrew. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Yale Medical School	(1906) 83.5; (1912) 77.5, 78, 85.5,	86.2
Johns Hopkins University	(1912)	83.6
Baltimore Medical College	(1912)	76.6
College of Phys. and Surg., Baltimore	(1911) 75; (1912)	75.3, 76.9

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Tufts College Medical School.....(1911) 78
University and Bellevue Hospital Medical College..(1911) 84.9
Columbia University, College of Physicians and Surgeons (1901) 76.9; (1905) 81.9
Woman's Medical College of Pennsylvania.....(1912) 80.2
Vanderbilt University.....(1900) 76.5
University of Vermont.....(1911) 76.5, 77.5; (1912) 76.1
University College of Medicine, Richmond.....(1912) 75.5

FAILED

Maryland Medical College.....(1910) 71.6; (1911) 63.2
College of Physicians and Surgeons, Boston.....(1908) 54.5
Woman's Medical College of Pennsylvania.....(1912) 72.8
University of Vermont.....(1891) 61.8

Connecticut Eclectic November Report

Dr. Thomas S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports that at the examination held at New Haven, Nov. 12, 1912, two candidates were licensed through reciprocity. One of these was a 1912 graduate of the Eclectic Medical College of Cincinnati and was licensed through reciprocity with Pennsylvania and the other was a 1912 graduate of the Eclectic Medical College of New York and was licensed through reciprocity with New York. Another candidate, a 1911 graduate of the Eclectic Medical College of New York, appeared for examination but did not complete it.

Connecticut Homeopathic November Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, Nov. 12, 1912. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. Three candidates were examined, all of whom passed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Boston University	(1910)	85
New York Homeopathic Med. College and Hospital	(1912)	81
Hahnemann Med. College and Hosp., Philadelphia	(1911)	93

Florida November Report

Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of the State of Florida, reports the written examination held at Jacksonville, Nov. 11-12, 1912. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 79, of whom 60 passed and 19 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
University of Alabama	(1912) 80, 87, 88,	89
Birmingham Medical College	(1912)	84
University of Arkansas	(1912)	77
Howard Univ., Washington, D. C.	(1911) 75, 80; (1912)	86
Atlanta College of Phys. and Surg.	(1911) 75; (1912) 78,	86
Medical College of Georgia	(1912) 75,	77
College of Physicians and Surgeons, Chicago	(1894)	89
College of Medicine and Surgery, Chicago	(1907)	75
Chicago College of Medicine and Surgery	(1906)	89
Sioux City College of Medicine	(1896)	85
University of Louisville	(1878) 75; (1912) 75,	87
Tulane University of Louisiana	(1912) 77, 88,	93
Baltimore University	(1909)	76
Baltimore Medical College	(1910) 83; (1911)	87
College of Physicians and Surgeons, Baltimore	(1881) 75; (1909) 87; (1911) 82.	
University of Maryland	(1907) 75; (1911) 83; (1912) 85,	85
College of Physicians and Surgeons, Boston	(1912)	77
University of Michigan, Department of Medicine and Surgery	(1870) 75; (1912) 85.	
Mississippi Medical College	(1912)	79
Dartmouth Medical School	(1910)	91
Columbia University, College of Phys. and Surg.	(1894)	80
Leonard School of Medicine	(1912) 75, 81, 82,	89
North Carolina Medical College	(1903)	78
Jefferson Medical College	(1902)	91
Medical College of the State of South Carolina	(1905) 75; (1912) 80, 83.	
University of Tennessee	(1909) 75; (1910) 79; (1911) 75; (1912) 89.	
Vanderbilt University	(1912) 82,	86
Memphis Hospital Medical College	(1905) 81; (1912) 76,	77
Victoria University, Medical Dept., Ontario	(1881)	75

FAILED

University of Alabama	(1910) 69; (1912)	69
Medical College of Georgia	(1911) 67; (1912) 68,	69
Atlanta Medical College	(1888)	63
Southern College of Medicine and Surgery	(1912)	66
Louisville National Medical College	(1910)	46
College of Physicians and Surgeons, Boston	(1910)	69
St. Louis College of Phys. and Surg.	(1905) 60; (1911)	53
University of Buffalo	(1901)	68
Leonard School of Medicine	(1911)	69
Jefferson Medical College	(1899) 68; (1909)	66
Medical College of the State of South Carolina	(1912)	61
Memphis Hospital Medical College	(1912)	59
Vanderbilt University	(1894)	31
University of West Tennessee	(1911)	62

Medicolegal

Valid Ordinance of Board of Health

(Schwarz Bros. Co. vs. Board of Health (N. J.), 83 Atl. R. 762)

The Supreme Court of New Jersey says that an ordinance passed by the board of health of Jersey City provides in effect that it shall be the duty of every owner of any animal which shall die from accident or disease, or be killed for any purpose other than consumption for food, within the limits of Jersey City, to give notice of such death to the office of the board of health within a specified time after death. It shall be unlawful for any person or persons, except the health officer or the board or the contractor for the removal of dead animals, to transport any such animal, from the place where it died, to any place within or without the limits of Jersey City, without having first obtained permission in writing from the board or health officer, and that no permit shall be granted unless there be a written application signed by the owner. If, in the judgment of the health officer or the board, such dead animal is a nuisance or offensive and likely to be dangerous to the public health, or if the owner shall fail to apply for a permit or to remove the animal within the time mentioned in the permit, or within such time as in the judgment of such health officer or board may be necessary to prevent it from becoming a nuisance or offensive and likely to be dangerous to the public health, then it shall be lawful for such officer or board to cause its removal by the contractor, etc.

The court holds (1) that the ordinance is not unreasonable; (2) that it is not discriminatory, and does not deny to citizens the equal protection of the laws in violation of the state or federal constitution; (3) that it is within the power of the board of health; and (4) that, in the absence of proof of fraud, the motives of the board of health in passing it will not be inquired into.

Where an ordinance is within the power of the board which passed it, the presumption is that it is reasonable, and the judicial power to declare it void can be exercised only when, from the inherent character of the ordinance or from evidence showing its operation, it is demonstrated to be unreasonable, and the burden of proof is on the person asserting the unreasonableness, where the ordinance is not inherently unreasonable. This ordinance was passed under the authority granted to boards of health to pass ordinances relating to the public health. It surely is not unreasonable in providing for the notice of death of such animals. This seems reasonable in order that there may be an investigation and suitable precautions taken to prevent infection or epidemic if need be. Nor is it unreasonable in providing for the removal of a dead animal if the owner fails to apply for a permit or to remove it within such time as in the judgment of the health officer or the board may be necessary to prevent it becoming a nuisance. So, too, it is not unreasonable to prohibit the transportation of such a dead animal through the streets without a permit from the board or health officer, to be obtained on the written application of the owner. This empowers the board to make necessary regulations for each specific case.

Admissibility of Evidence to Prove Criminal Abortion

(Meno vs. State (Md.), 83 Atl. R. 759)

The Court of Appeals of Maryland holds admissible in evidence the dying declaration of the girl, who uttered no word, but gave her statement by affirmative or negative nods to questions put to her by a detective through her father in a hospital, she having been told by the physician in attendance that she was going to die, which she indicated by a nod that

she realized. The question of the amount of credence to be placed in the dying declaration was for the jury. Nor was it inadmissible on the ground that, if an abortion was performed, the girl was an accomplice to its perpetration, and it was therefore the statement of an accomplice, on which, unless corroborated, no conviction could be properly had. That argument is not supported by the authorities. A woman on whom an abortion has been performed is regarded as a victim rather than an accomplice, and, even if she be deemed an accomplice, she is competent as a witness for the prosecution of the accused, and her evidence does not require corroboration when it establishes satisfactory proof of guilt, though in all such cases the credibility of it is to be passed on by the jury under proper caution from the court, as to the amount of credence to be placed in it.

Objection was also made to the dying declaration in this case on the ground that the girl did not possess sufficient understanding at the time when it was made to entitle it to any probative force. The evidence on this point given by the physicians was conflicting. The one who was in attendance on her stated her condition, what she did, and the manner in which she replied to questions, but did not express any opinion whatever as to her mental condition at the time. Two other physicians examined as experts, who had not attended her, differed quite radically as to her probable mental condition at the time. Under these circumstances, it was proper that the jury should pass on this, as on the other matters of fact which were involved in the trial of the case.

Evidence was not admissible to show that the girl had had improper relations with another man, or other men, to negative an inference of motive on the part of the accused for the perpetration of the abortion. The introduction of the evidence could only have tended to raise an immaterial and collateral issue, and so divert the attention of the jury from the real question involved. Nor was it admissible to show by a witness that the accused had told him that he had performed operations on or treated other girls as showing a familiarity on the part of the accused with what could be done to rid a woman of a child. There is a class of cases in which evidence may be given of other similar acts done by an accused, but this class of cases is restricted to where the several acts are connected together and form part of one entire scheme or transaction, so that one of the acts forms a basis for a reasonable and proper inference as to the purpose and intent with which the particular act was performed for which the accused was then on trial.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, IV, No. 6, pp. 333-424

1 *Diagnosis of Enlarged Bronchial Lymph-Nodes. H. F. Stoll, Hartford, Conn.
2 Graphic Chart Method of Studying and Teaching Principles of Infant-Feeding. D. M. Cowie, Ann Arbor, Mich.
3 *Helminthiasis in Children. W. W. Murphy, Chicago.
4 *Serum Treatment of Pneumonia. R. G. Freeman, New York.
5 Long Interval Feeding of Premature Infants. J. C. Litzenberg, Minneapolis, Minn.
6 Respiratory System. B. S. Veeder, St. Louis.

1. **Diagnosis of Enlarged Bronchial Lymph-Nodes.**—A moderate enlargement of the bronchial nodes, Stoll found, often gives physical signs of sufficient distinctness to render their diagnosis possible by clinical methods alone. The signs are usually most marked in the interscapular space. Tapping percussion will elicit bronchial node dulness that is imperceptible when more force is used. Whispered bronchophony in the interscapular space is the earliest and most valuable sign of swollen bronchial nodes. It is especially significant in children and has almost, if not quite, the same importance in adults. While the spasmodic, brassy cough is quite typical of bronchial node tumor, the diagnosis must sometimes be made in the absence of the cough. An ever-present fatigue, associated with anorexia, afternoon temperature and possibly a slight loss of weight should suggest the possibility of their tuberculous nature.

3. **Helminthiasis in Children.**—Careful examination by Murphy of the stools from 102 children from 2 to 12 years of age showed that 6.86 per cent. were infected with intestinal parasites. In one case there was a double infection giving a total of eight infections. Four (3.92 per cent.) of the cases were *Trichiuris trichiura* infections; two (1.96 per cent.) were *Ascaris lumbricoides* infections; one (.98 per cent. was a *Taenia saginata*, and one (.98 per cent.) was a *Trichimonas intestinalis*. Only a small percentage of cases infected with intestinal parasites display any obvious symptoms. Eosinophilia was not constant as a symptom of helminthiasis, but when present, it accompanied the other clinical manifestations. Further, its presence bore no relation to the species of parasite harbored.

4. **Serum Treatment of Pneumonia.**—The first seven of the patients whose clinical history is reported on by Freeman were injected with a simple pneumococcus serum, a large dose, 100 c.c., being injected and in some cases repeated. The injection was done by means of a buret made for salvarsan injection, and a rubber tube with a glass section near the needle and a very large needle, this being necessary as the blood-serum will not flow freely through a small needle. The injections were all made into the anterior abdominal wall and it was found that by keeping the end of the needle in the fascia below the skin and gradually advancing this rather long needle 100 c.c. could be readily delivered with one penetration of the skin. Pressure was made in addition to that of gravity by the use of a rubber bulb attached to the buret. The first seven patients received 100 c.c. of pneumococcus serum, while the last eight cases received 50 c.c. each of pneumococcus and streptococcus serum.

The children injected varied in age from 2 months to 3¼ years, the average age being 20 months, while the controls ranged in age from 3½ months to 3½ years, with an average age of 11 months. As to the effect of the serum, there was in many cases an immediate change in the appearance of the child. Children that looked septic, were apathetic, with anorexia and a pale blotchy complexion, in several cases after the injection had a good color, were brighter, took the feedings better and seemed much improved, although the condition in the lung was usually unchanged or perhaps spreading. The effect on the temperature in some cases was marked. In seven cases these was a reduction in temperature after injection, while in eight cases there was no evident effect.

The effect on the process in the lungs was interesting for, in some cases in which there seemed to be an improvement in the general condition of the child, the lung condition either showed no improvement or spread. Where there was a marked reduction in temperature from the injection the lung signs did not spread materially and often cleared up quickly. The effect on the leukocytosis was studied in eleven cases, most of which were injections of combined pneumococcus and streptococcus serum. These showed usually a reduction in the leukocytosis, although in one case the leukocytes increased from 10,000 to 18,000 with a reduction in the polynuclear leukocytes from 70 to 44 per cent. The average of the eleven cases was a reduction in leukocytes from 25,790 to 19,333, and a reduction of polynuclear leukocytes from 67 to 63 per cent.

As to the effect of the injections on the duration of the disease it was found that the duration after injection, as shown by fever, varied from one to nine days, the average being 5⅓ days, and the total average duration of the disease in the patients who recovered being 6 7/9 days, while of the eight control cases the average duration of six was 10½ days, and in two the temperature continued for a very long period. Of the fifteen injected patients nine recovered and six died, giving a mortality of 40 per cent.; of fifteen controls eight recovered and seven died, giving a mortality of 47 per cent. Among the six patients injected with pneumococcus serum alone there were four recoveries and two deaths, while the controls showed five recoveries and one death. Of the nine patients injected with the pneumococcus and streptococcus

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serum five recovered and four died, while of the controls of these there were three recoveries and six deaths. Repeated injections in patients who had showed no reaction from the first injection were equally unsuccessful.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

September, XXI, No. 3, pp. 557-848

7 Morphologic Changes in Nose and Face Due to Development of Brain. J. M. Ingersoll, Cleveland.
8 Prevention of Deafmutism. M. Yearsley, London.
9 Epithelial Grafting as Means of Effecting Sure and Rapid Healing of Cavity Left by Complete Mastoid Operation. C. A. Ballance, London.
10 After-Treatment of Mastoid Operations. J. W. Wood, London.
11 Wassermann Reaction and Salvarsan in Diagnosis and Treatment of Syphilis in Ear, Nose and Throat Affections, with Special Reference to Auditory Nerve. J. C. Beck, Chicago.
12 What Is Best Type of Radical Frontal Sinus Operation, Viewed from Simplicity of Technic, Time of Healing and Cosmetic Results? G. E. Davis, New York.
13 Origin of Compensatory Tonus After Destruction of Labyrinth. G. E. Shambaugh, Chicago.
14 Syphilis of Inner Ear. O. Glogau, New York.
15 Pathology of Labyrinthitis. E. Ruttin, Vienna.
16 Brain Abscess, of Otitic Origin, Based on Study of Twenty-One Personal Cases. E. B. Dench, New York.
17 Eustachian Tube in Chronic Otitis Media. E. M. Holmes, Boston.
18 Middle-Ear Suppuration and Life Insurance. E. Amberg, Detroit.
19 Relief of Tinnitus by Use of Nitrate of Silver Applied Within Eustachian Tube. W. C. Braislin, Brooklyn.
20 Cholesteatoma of Ear. E. Gruening, New York.
21 Cases of Paracoustic Vertigo and Nystagmus. J. R. Page, York.
22 Primary Lateral Sinus Thrombosis Without Involvement of Mastoid Process or Tympanum. H. L. Lynah, New York.
23 Fibroma or Fibro-Angioma of Middle Ear. A. J. Brady, Sydney, Australia.
24 Case of Myxofibroma of Nasopharynx. J. H. Bryan, Washington, D. C.

Annals of Surgery, Philadelphia

December, LVI, No. 6, pp. 809-963

25 *Fatal Postoperative Embolism. L. B. Wilson, Rochester, Minn.
26 Acute Unilateral Hematogenous Infections of Kidney. J. H. Cunningham, Boston.
27 *Management of Grave Emergency Cases of Extra-Uterine Pregnancy. F. Cobb, Boston.
28 Operative Treatment of Fractures. J. R. Walker, New York.
29 *Etiology of Congenital Dislocation of Hip. E. Rixford, San Francisco.
30 Bone Plating in Irreducible Fracture of Clavicle: Report of Case. J. L. Bendell, Albany, N. Y.
31 Traumatic Separation of Lower Epiphysis of Femur. J. I. Russell, New York.
32 Case of Fracture of Odontoid Process of Axis with Intermittent Pressure Paralysis. G. R. Elliott, New York, and E. Sachs, St. Louis.
33 Mediotarsal Subluxation as Shown by Roentgenogram. E. R. Corson, Savannah, Ga.
34 *Multiple Gunshot Wounds of Intestine Without Perforation of Lumen. R. M. Thornburgh, San Francisco.
35 Displacements of Colon. C. E. Black, Jacksonville, Ill.
36 Gangrene of Ileum Complicating Appendicitis. J. Wiener, New York.
37 Appendicitis in Infant Sixteen Days Old with Appendix in an Inguinal Hernial Sac. C. M. Remsen, Atlanta, Ga.
38 Primary Sarcoma of Spleen. M. D. Council, Roanoke, Va.
39 Bevan's Operation for Undescended Testicle. J. H. Jopson, Philadelphia.
40 Traumatic Femoral Aneurysm Cured by Matas' Method of Endo-Aneurysmorrhaphy. C. S. Ford, U. S. Army.

25. Abstracted in THE JOURNAL, June 6, p. 1975.

27. **Extra-Uterine Pregnancy.**—Cobb's paper is based on a careful study of 137 cases of tubal and interstitial pregnancy at the Massachusetts General Hospital during the nine years from 1902 to 1910, including Cobb's cases. The object in undertaking this study was to obtain information in regard to the wisdom of immediate operation in the desperate cases of rupture with severe hemorrhage. He found that more than 22 per cent. of extra-uterine pregnancies occur in young women who have never before been pregnant. Salpingitis, or pelvic infection, is not an essential or frequent causative factor. Most of the cases of complete rupture with alarming hemorrhage occur in the early weeks, often in the first month; these are the cases that are rapidly fatal unless operated on. Cases that have gone two months or more are those that furnish the greatest number of non-emergency cases. Cases of sudden, severe rupture, until signs of marked intra-abdominal hemorrhage are present, often simulate other grave abdominal emergencies with abdominal tenderness and spasm, high white blood-count, fever and vomiting. In grave emergencies with signs of extreme hemorrhage, operation should be done at once without waiting for a possible reaction. In the less severe cases of tubal rupture, without signs of marked hemorrhage, a correct diagnosis is often difficult or impossible. The menstrual history cannot be depended on; many of the most alarming cases had skipped no period. The character and location of the pain may vary within wide limits. Tubal abortions are nearly as frequent as tubal ruptures. Cases of tubal abortion seldom give a history of skipping a menstrual period, but a history of continued slight flowing or dribbling since the last period. Cobb believes that immediate operation is the method of choice. Delay even for transfusion is dangerous and fatal, and especially delay with stimulation. With proper technic and use of intravenous salt solution the percentage of deaths directly due to operation will be very low. In a very small percentage of cases direct transfusion will be needed and will save the small number of cases that would be fatal otherwise. Direct transfusion should be done after operation, not before. At present, with the availability of infusion and direct transfusion, it is criminal for any operator of reasonable skill to delay.

29. **Congenital Dislocation of Hip.**—Rixford suggests that with the uterus pressing on the knees of the fetus it is evident that little movement would be possible to the legs and thighs. With any resistance to downward pulling of the thighs, a rigid uterine wall, small fibroid, legs in extension, feet caught over arms, or forehead, or shoulder, or amniotic folds, extension of the pelvis would develop a force pulling the pelvis away from the femur, that is, a force tending to stretch the capsule and displace the head of the femur upward and backward. Such a force would be a pull transmitted along the length of the femoral shaft, and therefore largely in the direction of the upward displacement. Furthermore, any theory based on such a force would not be subject to Vogel's objection to leverage motions, that if the long femur were a lever transmitting force enough to stretch the capsule, it would bend.

34. **Gunshot Wounds of Intestine Without Perforation of Lumen.**—In Thornburgh's case 35 cm. of ileum was completely denuded of its peritoneal and most of its muscular coat. Its mesentery was destroyed. There were three wounds in the descending colon and very numerous wounds of the mesentery. No perforation of the intestinal lumen could be demonstrated. No further wounds of viscera could be found. The wounds of the colon were inverted with purse strings or Lembert's, and attention was then directed to the wounded ileum. The patient was in such a condition of profound shock that resection of gut and mesentery was out of the question. The excellent proceeding, splitting the mesentery, described by Richardson was also impossible, owing to the fact that the mesentery was destroyed. Thornburgh decided to try to substitute omentum for the outer two coats of the ileum as well as for both layers of mesentery. The omentum was brought down and sutured to the superior surface of mesentery and gut by interrupted sutures. It then was carried over to the inferior surface and attached in like manner. The patient was drained in front and behind and placed in the Fowler position with the Murphy drip for the first twenty-four hours. The drip was discontinued after the first twenty-four hours and not resumed. The Fowler position was maintained for about two weeks. The convalescence was perfectly normal. There was no infection of any kind and the patient has perfectly recovered.

Archives of Pediatrics, New York

November, XXIX, No. 11, pp. 801-880

41 Etiology of Convulsions in Early Life. F. M. Crandall, New York.
42 Problems of Infant Feeding Illustrated by Cases and Charts. P. J. Eaton, Pittsburgh.
43 Short Method of Calculating Percentage Modifications. M. Ladd, Boston.
44 Graphic Feeding Chart: Method for Calculating Milk Percentages and Caloric Values. C. H. Smith, New York.

Boston Medical and Surgical Journal

December 12, CLXVII, No. 24, pp. 827-866

45 *Alimentary Aberrations: Roentgen Rays as Factor in Their Diagnosis. (To be continued.) F. Brown, Boston.
46 *Prevention of Water-Borne Disease in Lake and River Traffic. A. J. McLaughlin, Washington, D. C.
47 Arteriosclerosis Probably Not an Important Factor in Etiology and Prognosis of Involution Psychoses. G. L. Walton, Boston.

48 *Heredity: Special Reference to Law of Gregor Johann Mendel, O.S.A. J. M. Connolly, Boston.
49 Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to Method of Forlanini. (To be continued.) G. M. Balboni, Boston.

December 19, CLXVII, No. 25, pp. 867-902

50 Scholarship in Medicine. F. C. Shattuck, Boston.
51 Chronic Alveolar Osteomyelitis (Pyorrhea Alveolaris); Its Causes and Treatment with Vaccines. L. S. Medalia, Boston.
52 Insanity of Feeble-Minded. W. N. Bullard, Boston.
53 *Alimentary Aberrations; Roentgen Rays as Factor in Their Diagnosis. P. Brown, Boston.
54 Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax, According to Method of Forlanini. (To be continued.) G. M. Balboni, Boston.

45. Alimentary Aberrations.—In this, the first portion of his paper, Brown discusses in a general way, the value of roentgenoscopy in the diagnosis of many gastro-intestinal conditions. The Roentgen pathology of the alimentary tract, by which, Brown says, may be indicated those pathologic problems in this region, the diagnosis of which the Roentgen rays may help to elucidate, is composed of situations both simple and complex; the more simple diagnostic problems may relate to the determination of the size, the shape and the position of the stomach and to that of the position and arrangement of the classical divisions of the intestines. Problems which may be considered as slightly less simple are those having to do with the determination of motility, or other evidence of peristaltic activity. Those more complex in nature are problems dealing with the diagnosis of some localized influences inhibitory to normal function; to wit, kinks, pressure-points, and other hindrances due to extrinsic causes such as adhesion bands and the like. Finally, the often very complex problems which are offered by the intrinsic lesions, of a nature either destructive or cicatrizing, which are often malignant and always seriously to be considered.

46. Prevention of Water-Borne Disease in Lake and River Traffic.—To prevent water-borne disease in lake and river traffic, McLaughlin says it will be necessary to proceed along the following lines: 1. Popular education is necessary to prevent drinking of unpurified surface water. 2. Public water-supplies in communities engaged in interstate traffic should conform to United States standards. 3. United States standards should be based on the bacterial count and the quantitative estimation of *B. coli* and should be the minimum requirements to prevent the spread of disease, such as typhoid fever or Asiatic cholera in interstate traffic, the various states retaining the right to impose additional requirements, consistent with state laws where such laws exist. 4. United States regulation is necessary, requiring vessels engaged in interstate traffic to fill their water-tanks with distilled water or from public water-supplies certified as safe and conforming to United States standards. 5. Inspection of vessels by United States officers and by state and municipal officers duly qualified to enforce this regulation.

48. Heredity.—Connelly reviews the Mendelian theory in its application to medicine and summarizes his views as follows: 1. Both parents being neuropathic, all children will be neuropathic. 2. One parent being normal, but with the neuropathic taint from one parent, and the other parent being neuropathic, half the children will be neuropathic and half will be normal but capable of transmitting the neuropathic make-up to their progeny. 3. One parent being normal, and of pure normal ancestry and the other parent being neuropathic, all children will be normal but capable of transmitting the neuropathic make-up to their progeny. 4. Both parents being normal, but each with the neuropathic taint from one parent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic. 5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one parent, all the children will be normal; half of them will be capable and half incapable of transmitting the neuropathic make-up to their progeny. 6. Both parents being normal, and of pure normal ancestry, all children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

53. Alimentary Aberrations.—Summarizing his two papers Brown says we have to-day in the alimentary application of Roentgen-rays, as dependable a method of aiding our diagnostic knowledge as has been given us for many years. Nevertheless, in this method, we have but a factor making for our diagnostic success in any given case. The practitioner of the future is in danger, through just such helpful agents as these, of becoming a clinical scientist instead of a scientific clinician. His primary mission is still entered on at the bedside, and at the beside he has little else to aid him than had his predecessors of the earlier days—his five wits. Let him, therefore, use them, and then he shall be able to stretch forth his hand toward the laboratory, not beseechingly, as one who is helpless, but with the authority born of knowledge, as becomes a master.

Bulletin of Manila Medical Society, Manila

October, IV, No. 10, pp. 161-177

55 *Spirit of Research in Medicine. W. E. Musgrave, Manila.
56 *Action of Milk of Beriberic Women on Frog's Heart. M. S. Guerrero and J. G. Gavieres, Manila.

55. Spirit of Research in Medicine.—The history of the spirit of research in medicine, says Musgrave, is the history of scientific medicine itself; for in the days before the spirit of investigation had blazed a path, medicine was all that is to-day called quackery. This was because of ignorance. There being no real knowledge, its place was taken by appeals to the mysterious and occult, and success in medicine depended largely on the skill with which one could manipulate these qualities so as to convince a credulous public that these were facts. To-day true knowledge is available for those who care to look for it and the popularity of many of the old cults, administered in new guises, is brought about by viciousness on the part of the healer playing on the ignorance of his clientele. The development of the research spirit, whether by government, municipality or individual, has been along parallel paths with development in other lines of science until to-day it is the all-powerful medical influence and is daily yielding immense harvests of knowledge. By its results much of medicine may now be classed more nearly as an exact science, and in other fields its influence has made possible for acceptance only such facts as are conclusively demonstrated. The best medical schools to-day are using every effort to inculcate the spirit of investigation into students; teaching them to inquire into the reasons for things, to look from cause to effect and vice versa. This type of development should not be confined to test-tube experiments in a laboratory, but should be, and is extending throughout all branches and departments of our science. Experience long since has shown that the student educated in this way makes a better physician. That much-feared tendency to overexperimentation, so much vaunted by our antivivisection friends, has not materialized. The extra knowledge brought out by the investigating mind only reveals more clearly the vast unexplored field of uncertainty and reacts to a practical conservatism in dealing with patients which makes an ideal physician. However, to get this properly balanced mind the research training must not be confined to one department of medicine and here there has been in the past a real danger, a danger now fortunately passing away.

56. Action of Milk of Beriberic Women on Frog's Heart.—The authors made fifty-five experiments on twenty-eight samples of milk from beriberic women who had beriberic children in order to determine the longest time of survival of the frog's heart in this kind of milk. They conclude that the milk of a beriberic woman who has a beriberic child, kills the frog's heart within less than thirty minutes in seventy-one out of 100 cases. This reaction is not, however, constant; 29 per cent. of the cases exceed thirty but not sixty minutes; only one of the cases examined reached fifty-five minutes. On the other hand, this proportion is reversed in the case of non-beriberic women with non-beriberic children because here only 36 per cent. do not exceed thirty minutes, while 64 per cent. live beyond sixty minutes. Thus, the frog's heart, exposed to the action of the milk of non-beriberic mothers who have non-beriberic children tends to survive more than thirty minutes. This average of 36 per cent. in which the duration

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of cardiac contractions is from 0 to 30 minutes, is believed to be due to two causes; primarily to the age of the child and secondly, to the rhythm of the heart on its removal from the animal. When the child is less than 1 month old, the time of survival of the heart in the milk is brief as it does not even reach thirty minutes. The authors believe they are justified in concluding that in the majority of cases (71 per cent.) where the frog's heart, after several examinations, dies within thirty minutes in the milk experimented on, a toxic substance which is secreted from the mammary glands of a beriberic woman, and which produces beriberi in the child whom she nurses, is found in the milk. In doubtful diagnosis, they believe that this test is of great help.

Cleveland Medical Journal

November, XI, No. 11, pp. 763-858

57 *Clinical Study of Elimination of Phenolsulphonephthalein by Kidneys, with Report of One Hundred and Fifty Cases. H. L. Sanford, Cleveland.
58 Sanitary Condition of Cleveland Water-Supply. D. D. Jackson, New York.
59 Sanitary Survey of Lake Michigan Along Wisconsin Shore. E. J. Tully, Madison, Wis.
60 Typhoid in Cleveland in 1911. T. S. Jackson and R. G. Perkins, Cleveland.

57. **Phthalein Elimination by Kidneys.**—In view of a considerable experience in the past with other renal functional tests, Sanford considers the phenolsulphonephthalein test as the most valuable means of estimating kidney function that has yet been introduced, for the following reasons: 1. The rapid appearance of the drug in the urine after administration; in normal cases in from three to five minutes if given intravenously, and in from five to twelve minutes if given intramuscularly. 2. The complete elimination of the drug by the kidney in a short time. It is only necessary to collect the urine after the appearance of the drug for two periods of one-half hour after intravenous administration and for two periods of one hour after it is given intramuscularly. All other drugs yet introduced for estimating kidney function appear more slowly and require longer time for elimination. 3. The simplicity of technic of the test. The color of the drug is well adapted for exact colorimetric estimation. 4. The accurate indication of renal power which phthalein gives in cases of prostatic obstruction as an aid in deciding the operability of a case. By successive tests in these patients the surgeon can tell if the preliminary treatment is increasing the functional power of the kidneys and he thus can select a time when operation would promise the best results. He will equally be warned against bad results. 5. The accurate demonstration of the relative efficiency of each kidney which can be secured in surgical kidney cases by comparison of the phthalein elimination of the two sides with the aid of ureteral catheterization.

Colorado Medicine, Denver

December, IX, No. 12, pp. 361-382

61 Some Types of Thyroid Insufficiency. C. E. Edson, Denver.
62 Three Serviceable Obstetric Expedients. H. G. Wetherill, Denver.
63 Foreign Bodies in Cornea: Treatment. W. C. Bane, Denver.
64 Torticollis, Wry Neck. L. W. Ely, Denver.

Journal of Medical Association of Georgia, Augusta

December, II, No. 8, pp. 243-280

65 Intestinal Obstruction. G. W. Whiteside, Lovonia.
66 Necessity of Healthy Mouths in Treatment and Prevention of Diseases. N. G. Slaughter, Athens.
67 Malaria. J. C. Holliday, Athens.
68 Pellagra. T. J. Wills, Washington, D. C.
69 Treatment of Pneumonia. B. W. Lockhart, Lula.
70 Value of Roentgen Ray in Diagnosis of Foreign Bodies. A. B. Elkin, Atlanta.
71 Naked-Eye Pathology of Urine. A. L. Fowler, Atlanta.
72 Improved Technic of Ether Vapor and Nitrous-Oxid-Oxygen Anesthetics. T. J. Collier, Atlanta.

Medical Record, New York

December 14, LXXXII, No. 24, pp. 1063-1108

73 Sanitary Control of Local Milk Supplies Through Local Official Agencies. E. J. Lederle, New York.
74 Local Anesthesia in Operations on Rectum. C. B. Kelsey, New York.
75 *Railroad Hospital Associations. F. Allport, Chicago.
76 Additional Report on Use of Sphygmomanometer in Examinations for Life Insurance. J. W. Fisher, Milwaukee, Wis.
77 Heart Murmurs and Patients. B. Robinson, New York.
78 Case of Ureteral Calculus Successfully Treated with Oil Injections into Ureter. W. S. Reynolds, New York.
79 Safety Screw Driver and Screws for Lane Plates. A. Wood, New York.

December 21, LXXXII, No. 25, pp. 1109-1154

80 *Marginal Sounds in Diagnosis of Pulmonary Tuberculosis. G. E. Bushnell, U. S. Army.
81 Mechanism of Heart Beat, with Consideration of Some of Its Functional Disturbances. W. R. Steiner, Hartford, Conn.
82 Selection of Female Risks on Whom Hysterectomy and Ovariotomy Have Been Performed. P. H. Ingalls, Hartford, Conn.
83 Sacral Kidney Simulating Acute Appendicitis. M. S. Kakels, New York.
84 Postoperative Treatment of Laparotomy, with Complete Wound Closure. R. S. Fowler, Brooklyn.
85 Mistakes in Diagnosis of Typhoid. C. E. Nammack, New York.
86 New Gastro-Esophagoscope. J. London, New York.

75. **Railroad Hospital Associations.**—The best and most equitable manner of remunerating surgeons for services rendered railroad employees, etc., is the subject discussed by Allport. He says that a railroad medical fee bill should be established by medical associations. In doing so we should remember it is proper for obvious reasons that regularly employed railway surgeons may considerably reduce their fees to railroads for services rendered. The amount, however, should not be improperly low and should be fair and reasonable to both employer and employee. There has always been something mysterious about this subject, and it has never been a matter that has been openly understood as it should be. It is not expected that this fee bill will ever be universally used (there are always some men who prefer to work in the dark), but it would at least establish a standard and give an open expression of opinion from those who are best able to judge of what are the minimum fees which can be accepted by self-respecting railway surgeons. The method at present in vogue with most railroads, whereby surgeons either receive reasonable fees for services rendered or receive a reasonable salary, is a fairly satisfactory plan and should be continued until a distinctly better method can be demonstrated. Allport would have the medical profession discountenance any plan which seeks to reduce an already low remuneration by endeavoring to confer benefits on railroads or their employees at the cost of the medical profession. He believes that all railway insurance associations by which employees are insured against all forms of injuries or sickness are detrimental to the interests of the medical profession and should be discouraged. The diseases for which men may apply for relief should be carefully selected and definitely stated. This should relieve the doctors from caring for disgraceful diseases, most contagious diseases, and the innumerable partially or entirely imaginary diseases indulged in by poorly balanced and neurotic individuals who delight in haunting doctors' offices, especially where they can indulge in this morbid privilege without the payment of a fee.

If railroad hospital associations are formed adequate representation of both surgeons and employees should appear on their advisory boards. Only men drawing small salaries should be admitted to membership, and the remuneration to surgeons should consist in adequate salaries or in payment for actual services rendered, based on a low, but reasonable, fee bill. Employees should never be asked or required to sign personal injury releases to the company on receiving benefits from the association nor should they be required to become members of the association unless they themselves desire to effect such an alliance. Allport believes, also, that it is useless to endeavor to abolish the broad general idea underlying contract practice; it, like the locomotive and the automobile, has come to stay. Our efforts should be directed along the line of regulation instead of along the line of suppression.

80. **Marginal Sounds in Diagnosis of Lung Tuberculosis.**—Marginal sounds, Bushnell says, are best elicited in the most vigorous specimens of mankind. Therefore they are physiologic and not pathologic. In small apical lesions, whether those of initial or arrested tuberculosis, marginal sounds are produced practically to the same extent as in health. But when the disease involves any considerable portion of the upper lobe, it is found that while present on the healthy side, the marginal sounds are often heard more easily over the base of the affected lung, and, moreover, that they are generally evanescent. That lung is best capable of producing marginal sounds which can expand most freely in inspiration. Marginal sounds then are the equivalent of Williams' phenomenon in so far as the

presence of disease of the upper lobe tends to diminish the use of the lung in ordinary respiration and thus make certain that when it is called on for deep inspirations there will be no overdistention to prevent its free expansion. Excessive coughing, if it leads to a distention of the lung margins, prevents the occurrence of marginal sounds, and they are, of course, absent in the case of pleural adhesions over the lower lobe or of advanced tuberculosis of that lobe, conditions which prevent the necessary free expansion of the lung. On the other hand, the presence of marginal sounds is a proof of the absence of extensive adhesions and of advanced tuberculosis of the base.

New York Medical Journal

December 14, XCVI, No. 24, pp. 1205-1256

87 *Prevention of Epilepsy. L. P. Clark, New York.
88 *Overeating as Cause of Acute Appendicitis. E. Novak, Baltimore.
89 Labyrinthitis and Cerebellar Abscess: Differential Diagnosis. I. W. Voorhees, New York.
90 Autotherapy. C. H. Duncan, New York.
91 Defective Vision in Children. A. C. Santter, Philadelphia.
92 Prognosis in Cholelithiasis. E. M. Stanton, Schenectady, N. Y.
93 Albumin Determination: Aid in Diagnosis of Kidney Lesions. G. W. Warren, New York.
94 Pneumonia in Open-Air Sanatoria. H. L. Barnes, Wallum Lake, R. I.
95 *Simple Perineal Enucleation of Prostate Gland. J. M. White, Meridian, Miss.

87. Abstracted in THE JOURNAL, October 19, p. 1481.

88. Abstracted in THE JOURNAL, May 18, p. 1536.

95. **Enucleation of Prostate.**—In White's method the sound being introduced into the bladder, an incision is made, beginning about one-fourth inch in front of the anus, in the median line, and extending up to near the scrotum, through skin and fascia; then the knife is thrust deeply to the prostate. It is then withdrawn and the hand of the operator is well lubricated with sterile glycerin or liquid petrolatum. His two fingers are introduced to the prostate and the wound is dilated as widely as possible by them. If need be, the tissues are incised transversely. Then the entire hand, well anointed, is introduced into the incision. Now a knife is introduced and, guided by the fingers, two incisions are made through the capsule anteroposteriorly on each side of the urethra. The knife being withdrawn, the finger first enucleates the middle lobe through these incisions, being careful to keep intact the urethra, then the lateral lobes are enucleated by the fingers.

The advantages of this operation are said to be its simplicity, as it requires no instruments to bring the prostate into reach, it needs no retractors, it is not required even to have the bladder pushed down, and, by the touch of the fingers, the urethra is kept intact.

Northwest Medicine, Seattle, Wash.

December, IV, No. 12, pp. 257-286

96 Statutory Eugenics. D. H. Calder, Provo, Utah.
97 Plea for Sterilization of Criminals, Epileptics, Imbeciles and Insane. C. M. Clark, Cedar, Utah.
98 National League for Medical Freedom and Their Subsidized Newspapers, the Great Industrial Iconoclasts of the Century. A. S. Condon, Ogden, Utah.
99 General Anesthesia by Intravenous Injection of Ether-Salt Solution. L. W. Jenkins, Portland, Ore.
100 Extension Apparatus for Hip-Joint Disease. J. H. Snively, Seattle, Wash.

Philippine Journal of Science, Manila

June, VII, No. 3, pp. 131-270

101 Studies on Pneumonic Plague and Plague Immunization. I. Introduction. R. P. Strong, Manila.
102 *Id. II. Method of Transmission of Infection in Pneumonic Plague and Manner of Spread of Disease During Epidemic. R. P. Strong and O. Teague, Manila.
103 *Id. III. Influence of Atmospheric Temperature on Spread of Pneumonic Plague. O. Teague and M. A. Barber, Manila.
104 Id. IV. Portal of Entry of Infection and Method of Development of Lesions in Pneumonic and Primary Septicemic Plague: Experimental Pathology. R. P. Strong and O. Teague, Manila.
105 Id. V. Clinical Observations. R. P. Strong and O. Teague, Manila.
106 Id. VI. Bacteriology. R. P. Strong and O. Teague, Manila.
107 *Id. VII. Pathology. R. P. Strong, B. C. Crowell and O. Teague, Manila.
108 Id. VIII. Susceptibility of Animals to Pneumonic Plague. R. P. Strong and P. Teague, Manila.
109 *Id. IX. Protective Inoculation Against Pneumonic Plague. R. P. Strong and O. Teague, Manila.
110 Id. X. Immunization of Guinea-Pigs by Vaccination with Avirulent Plague Bacilli Mixed with Agar. M. A. Barber, Manila.
111 *Id. XI. Infection of Guinea-Pigs, Monkeys and Rats with Doses of Plague Bacilli, Ranging from One Bacillus Upward. M. A. Barber, Manila.
112 *Id. XII. Some Experiments to Determine Efficacy of Various Masks for Protection Against Pneumonic Plague. M. A. Barber and O. Teague, Manila.

102. **Transmission of Infection.**—It is maintained by Strong and Teague that during normal and dyspneic respiration of primary pneumonic-plague cases, plague bacilli are not usually expelled by means of the expired air. During coughing of such cases, even when sputum visible to the naked eye is not expelled, plague bacilli in large numbers may become disseminated into the air surrounding the patient. The idea that infection of doctors, nurses, attendants, etc., in plague hospitals is caused entirely by particles of sputum expectorated by the patient and visible to the naked eye they hold is erroneous. It follows from their experiments that the wearing of masks and the proper covering of any surface of the skin where fresh abrasions are present are important personal prophylactic measures against plague infection. It also follows that the eyes should be protected against this manner of conjunctival infection by proper glasses. Articles of clothing worn in the wards should be sterilized immediately after removal, since plague bacilli may be present even though no particles of sputum may be visible on them. From their experiments, also, it is evident how dangerous an infective agent a pneumonic-plague patient is. In no other disease is the individual so dangerous and in no other disease does the danger from droplet infection approach that which exists in pneumonic plague. The number of plague bacilli expelled in droplets from pneumonic-plague cases is probably far greater than the number of bacilli ever expeled by patients afflicted with tuberculosis, croupous pneumonia, diphtheria or influenza.

103. **Influence of Atmospheric Temperature on Infection.**—It is shown by Teague and Barber that when spread on glass slides and exposed to the air, plague bacilli occupy an intermediate position between the cholera vibrio and *B. prodigiosus* with regard to resistance to death from drying. Sarcina resists much longer than *B. prodigiosus*. When suspended in saline solution and sprayed into the air, the living cholera vibrio disappears with surprising rapidity, *B. prodigiosus* persists for a longer time and sarcina much longer than *B. prodigiosus*. The relative length of time that these organisms remain alive when sprayed into the air agrees strikingly with their survival on glass slides. This suggests that their disappearance from the air is also due to death from drying. This was shown to be in fact the case by spraying the same cholera suspension into a comparatively dry atmosphere and into one nearly saturated with moisture; living cholera vibrios remained in the air much longer in the latter instance. A similar experiment was performed with *B. prodigiosus* with the same result. The authors concluded from their experiments that were the plague organisms sprayed under similar conditions they would persist longer than cholera vibrios, but a shorter time than prodigiosus bacilli. Hence, it seems probable that the plague bacilli contained in fine droplets of pneumonic plague sputum would suffer death from drying in a few minutes unless they were suspended in an atmosphere with an extremely small water deficit. Infection in pneumonic plague follows the inhalation of droplets of pneumonic sputum and obviously the longer these droplets remain suspended in the air, the greater is the danger of infection.

As has just been stated, these fine droplets disappear very quickly except when they are suspended in an atmosphere with a very small water deficit. Such an atmosphere is under ordinary circumstances of common occurrence in very cold climates, whereas it is extremely rare in warm ones. Hence, since the droplets of sputum persist longer, the plague bacilli remain alive longer in the air, and there is a greater tendency for the disease to spread, in cold climates than in warm ones. In harmony with the above ideas, they found that the only great epidemic of pneumonic plague of modern times occurred in Manchuria during the winter of 1910 and 1911, when the atmospheric temperature was many degrees below zero Centigrade. The disease spread with amazing rapidity. Further-

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more, although during the past fifteen years there have been millions of plague cases in India and 2 to 5 per cent. of these have been cases of plague pneumonia, yet this form of the disease has not assumed epidemic proportions. The largest epidemic of pneumonic plague in India (1,400 deaths) occurred in Kashmir in northern India at an elevation of 1,524 meters above the sea-level during very cold weather.

107. **Pathology of Plague.**—From the authors' study of the human lesions and those produced experimentally in animals, it would appear that epidemic plague pneumonia results from inhalation, the primary point of infection being the bronchi. Along the bronchioles the infection extends by continuity directly into the infundibulum and air cells, or by contiguity through the walls of the bronchioles to the contiguous tissue of the lung and gives rise to a consecutive peribronchial inflammation in the tissues immediately surrounding the bronchioles. From these areas the infection rapidly spreads to the adjacent pulmonary tissue and visceral pleura. The bacilli rapidly multiply and produce at first pneumonic changes of the lobular type, and shortly afterward from the fusion of several rapidly spreading areas more general lobar involvement of the lung tissue. The blood becomes quickly infected and a true bacteremia results in every case. Secondary pathologic changes occur, particularly in the spleen, bronchial glands, heart, blood-vessels, kidneys and liver. The fact that the bronchial glands at the bifurcation of the trachea are always much more severely affected than any of the other lymphatic glands argues against the theory that epidemic pneumonic plague is primarily a septicemic disease, and that the lungs are infected secondarily from the blood. Moreover, in the earliest stage of the disease, the blood may be free from plague bacilli.

The conditions observed in the trachea and bronchi in epidemic pneumonic plague, together with the character of the pulmonary exudate, is pathognomonic of this condition. From the appearance of the mucous membranes of the throat, larynx and trachea, a diagnosis of pneumonic plague may sometimes be suggested. The tonsils may become secondarily infected in pneumonic plague, just as other lymphatic glands, for example, the bronchial ones, become so infected. However, in pneumonic plague, death occurs before any very marked macroscopic changes occur in the tonsils. There is no doubt also that the tonsils may become primarily infected in epidemics of pneumonic plague, just as has occurred in sporadic cases during epidemics of bubonic plague. This, however, is not the common channel of primary infection and in such cases involvement of the lymphatic glands of the neck occurs early in the course of the disease. The fact that the esophagus was found to be normal in every specimen examined and that the intestines showed only slight lesions constitutes another argument against the idea of the occurrence of primary intestinal plague infection in man, since in many of the pneumonic cases plague bacilli must have been repeatedly swallowed in the bronchial secretions and in the saliva.

109. **Protective Inoculation in Plague.**—Experiments in this direction have demonstrated that vaccination does not afford the same protection against pneumonic plague that it does against bubonic plague in experimental animals. They indicate strongly that prophylactic inoculation cannot be relied on as even a reasonable means of protection against pneumonic infection in man. It would appear that a proper mask furnishes the only reliable method of protection.

111. **Infection of Guinea-Pigs, Monkeys and Rats with Plague.**—In summary, Barber's results show conclusively that the smallest possible dose of virulent plague bacilli may infect fatally the more susceptible guinea-pigs, monkeys or rats.

112. **Efficacy of Various Masks in Plague Prevention.**—The "Mukden" mask in general use during the epidemic of pneumonic plague in Manchuria, during the winter of 1910 and 1911, Barber and Teague claim, does not prevent the passage into the mouth and nostrils of *B. prodigiosus* when contained in small droplets sprayed around the mask. This mask consists of a pad of absorbent cotton held over the mouth and nose by a many-tailed gauze bandage. A hood of heavy Canton flannel cloth, covering the entire head and tied in snugly at the neck, withstands much severer tests than does the Mukden mask. It does not, however, offer an absolute barrier to the passage of prodigiosus bacilli into the mouth and nostrils of the subject. This mask, with a window in front, is not more inconvenient nor more uncomfortable than the Mukden mask. It is shown that the inefficiency of the Mukden mask is not due solely to the fact that the mask fails to conform to the configuration of the face but that the bacteria may pass directly through the mask; for a piece of moist cotton placed in the center of the mask was found after the test to contain prodigiosus bacilli. It is believed that although masks hold back many bacteria that would otherwise pass into the mouth and nostrils, nevertheless their use during the recent epidemic of pneumonic plague in Manchuria lent a false sense of security which may have led to the taking of unnecessary risks.

Southern Medical Journal, Nashville, Tenn.

December, V, No. 11, pp. 733-806

113 Southern Medicine and Its Problems. J. M. Jackson, Miami, Fla.
114 *Thyroid and Hyperthyroidism. S. McGuire, Richmond, Va.
115 *Empiricism in Medicine. H. H. Martin, Savannah, Ga.
116 Foreign Bodies in Open Operation for Fractures. H. P. Cole, Mobile, Ala.
117 Spinal Anesthesia. D. M. Molloy, Manila, P. I.
118 Enforcement of Health Laws. F. A. Webb, Calvert, Ala.
119 Relation of Auto-Intoxication to Certain Psychoses with Brief References to Methods of Treatment. W. D. Partlow, Tuscaloosa, Ala.
120 Intestinal Auto-Intoxication. A. W. Bitzer, Tampa, Fla.
121 Disease of Social Organism. W. S. Rankin, Raleigh, N. C.
122 Diagnostic Value of Cystoscope and Its Accessories. J. M. Mason, Birmingham, Ala.
123 Ulcerative Stomatitis: Report of Six Cases. G. F. Douglas, Meridian, Miss.
124 Chronic Diseases of Stomach. W. D. Haggard, Nashville.
125 Excision of Eight Feet of Lower Ileum. G. Torrance, Birmingham, Ala.

114 and 115. Abstracted in THE JOURNAL, December 7, p. 2090.

Texas State Journal of Medicine, Fort Worth

December, VIII, No. 8, pp. 265-228

126 International Sanitary Conferences and Their Results. G. M. Guiteras, Galveston.
127 Aggressive Treatment of Tuberculosis. T. Y. Hull, San Antonio.
128 Climate as Factor in Treatment of Tuberculosis. R. B. Homan, El Paso.
129 Concentration Method for Detecting Tubercle Bacilli in Sputum. J. J. O'Reilly, Fort Worth.
130 Specific Treatment of Acute Pulmonary Infections. I. L. Van Zandt, Fort Worth.
131 Hemorrhage in Typhoid: Report of a Case. F. C. Beall, Fort Worth.

Vermont Medical Monthly, Burlington

November 15, XVIII, No. 11, pp. 261-286

132 Crime: Cause and Prevention. F. W. Sears, Burlington.
133 Home and Office Treatment of Inebriety. T. D. Crothers, Hartford, Conn.
134 Differential Diagnosis of Gastric and Duodenal Ulcer. H. G. Stetson, Greenfield, Mass.

Wisconsin Medical Journal, Milwaukee

November, XI, No. 6, pp. 169-202

135 Chronic Tubercular Infection of Kidneys. A. H. Levings, Milwaukee.
136 Ten Years' Survey of Tuberculosis in LaFayette County. S. Orton and J. M. Cooke, Darlington.
137 Obstetric Teaching and Practice, Past, Present and Future. J. P. McMahon, Milwaukee.
138 *Diagnosis and Pathology of Acute Surgical Diseases of Abdomen. D. R. Connell, Beloit.

138. Abstracted in THE JOURNAL, June 22, p. 1970.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Australasian Medical Gazette, Sydney

October 26, XXXII, No. 17, pp. 427-453

1 Reduction and Destruction of Disease-Bearing Insects. J. J. Harris.
2 Color Sense in Relation to Emotion of Sex. G. H. Taylor.

November 2, XXXII, No. 18, pp. 455-478

3 Albuminuria in Relation to Life-Insurance. R. S. Skirving.
4 Idem. A. E. Finckh.
5 Idem. C. MacLaurin.
6 Review of Two and a Half Years' Work as Country General Surgeon. L. M. McKillop.

November 9, XXXII, No. 19, pp. 479-502

7 Tuberculin Dispensaries of London. L. H. Foy.
8 Three Cases of Bilharzia Hematobia. W. H. Nelson.
9 Case of Puerperal Eclampsia. F. C. Stevenson.

November 16, XXXII, No. 20, pp. 503-524

10 Methods for Preservation of Infant Life in Use in Australia. H. Mayo.
11 Romance of Medicine: Hippocrates. J. W. Bean.
12 Fibro-Adenoma of Male Breast. F. Flaschl.

British Medical Journal, London

November 30, II, No. 2709, pp. 1585-1588

13 *Report of Committee on Treatment of Simple Fractures.
14 Further Experiments Concerning Origin of Life. H. C. Bastian.

December 7, II, No. 2710, pp. 1589-1648

15 Present Position of Treatment of Fractures. R. Jones.
16 Biology of Tumors. C. M. Moullin.
17 Functional Nature of Cecum and Appendix. A. Keith.
18 Recent Progress in Syphilis. D. Power.
19 Sequel to Novocain Injection. S. Gooding and F. L. Etheridge.

13. **Treatment of Simple Fractures.**—The following are the main conclusions deduced from an analysis and full consideration by the committee of the British Medical Association of the material collected by the committee's investigators: I. The statistics relative to the non-operative treatment of fractures of the shafts of the long bones in children (under the age of 15 years), with the exception of fractures of both bones of the forearm, show as a rule a high percentage of good results. These are unlikely to be improved on materially by any other method of treatment. Operative results in children, expressed in percentages, are approximately the same as the non-operative. The relative figures are: non-operative cases (1,017) 90.5 per cent. good functional results; operative cases (64) 93.6 per cent. good functional results. II. It is possible either by non-operative or by operative treatment to obtain a high percentage of good results in children. III. In comparison with the non-operative results in children, the aggregate results of non-operative treatment in those past childhood (i. e., over the age of 15 years) are not satisfactory. IV. From the analysis of the age groups it is clear that there is a progressive depreciation of the functional result of non-operative treatment as age advances; that is to say, the older the patient the worse the result. V. In cases treated by immediate operation, the deleterious influence of age on the functional result is less marked. VI. In nearly all age groups, operative cases show a higher percentage of good results than non-operative cases. VII. Although the functional result may be good with an indifferent anatomic result, the most certain way to obtain a good functional result is to secure a good anatomic result. VIII. No method, whether non-operative or operative, which does not definitely promise a good anatomic result, should be accepted as the method of choice. For this reason mobilization and massage by themselves have not been found to secure a high percentage of good results. They are, however, valuable supplementary methods of treatment. Similarly, of operative methods, those which secure reposition and absolute fixation of the fragments yield better results than methods which fall short of this; imperfect fixation of the fragments by wire or other suture has been found to be an unsatisfactory procedure in the treatment of fractures of the long bones, with the exception of the olecranon process of the ulna. IX. Operative treatment should not be regarded as a method to be employed in consequence of the failure of non-operative measures, as the results of secondary operations compare very unfavorably with those of immediate operations. In order to secure the most satisfactory results from operative treatment, it should be resorted to as soon after the accident as practicable. X. It is necessary to insist that the operative treatment of fractures requires special skill and experience and such facilities and surroundings as will ensure asepsis. It is, therefore, not a method to be undertaken except by those who have constant practice and experience in such surgical procedures. XI. A considerable proportion of the failures of operative treatment are due to infection of the wound, a possibility which may occur even with the best technic. XII. The mortality directly due to the operative treatment of simple fractures of the long bones has been found to be so small that it cannot be urged as a sufficient reason against operative treatment. XIII. For surgeons and practitioners who are unable to avail themselves of the operative method, the non-operative procedures are likely to remain for some time yet the more safe and serviceable.

Clinical Journal, London

November 6, XLI, No. 5, pp. 65-80

20 Treatment of Hemoptysis. O. Grünbaum.
21 Diseases of Pleura. C. Wall.
22 Syphilis of Nervous System in Infancy, Childhood and Early Adult Life. S. A. Owen.

November 13, XLI, No. 6, pp. 81-96

23 Methods of Investigating Stomach Diseases. W. L. Brown.
24 Methods of Examination in Eye Cases. M. L. Hepburn.

November 20, XLI, No. 7, pp. 97-112

25 Significance and Treatment of Sugar in Urine During Pregnancy. H. Williamson.
26 Relief of Sick and Wounded in War. F. M. Sandwith.

November 27, XLI, No. 8, pp. 113-128

27 Ano-Rectal Surgery. A. Baldwin.
28 Relief of Sick and Wounded in War. F. M. Sandwith.

December 4, XLI, No. 9, pp. 129-144

29 Cranio-Cerebral Surgery. L. B. Rawling.
30 Relief of Sick and Wounded in War. F. M. Sandwith.

Lancet, London

November 30, II, No. 4657, pp. 1485-1566

31 Relations of Pleurisy to Tubercle. T. C. Allbutt.
32 Drunkenness and Physiologic Effect of Alcohol. C. Mercier.
33 Cysts of Vermiform Appendix. T. Wilson.
34 Pseudomyxoma of Peritoneum Arising from Perforation of Gelatinous Ovarian Cyst and Associated with Similar Cystic Disease of Vermiform Appendix. T. W. Eden.
35 Colon Bacillus in Blood. P. N. Panton and H. L. Tidy.
36 Obstructive Jaundice Relieved by Operation. K. H. Jones.
37 Value of Roentgen Rays in Diagnosis of Tuberculosis in Children. A. G. L. Reade and F. G. Caley.
38 Transmission of Poliomyelitis by Means of Stable-Fly (Stomoxys Calcitrans). J. F. Anderson and W. H. Frost.

December 7, II, No. 4658, pp. 1567-1632

39 Biology of Tumors. C. M. Moullin.
40 *Some Cases of Pyrexia. R. V. Solly.
41 *Suppression of Convulsion in Eclampsia. A. J. Wallace.
42 Eight Cases of Osteomyelitis of Spine. G. R. Strong.
43 *Epithelial Proliferation Induced by Injection of Gas-Works Tar. H. Bayon.
44 Acute Inversion of Uterus. J. H. Aytoun.
45 Extensive Fibro-Angioma Treated by Radium. F. H. Jacob.
46 *New Form of Tuberculin (T. F.); Its Diagnostic and Therapeutic Value. W. C. Lyons.
47 Case of Arrested Tuberculosis. C. Gayford.

40. **Pyrexia.**—Solly reports cases illustrating many different conditions causing pyrexia. Pyrexia due to enteric and paratyphoid fever, to the pneumococcus and to syphilis; pyemic and septicemic cases, including malignant endocarditis; pyrexia due to subdiaphragmatic abscess, portal pyemia and to nematoid worms; urinary cases and rat-bite fever.

41. **Suppression of Convulsion in Eclampsia.**—In two cases Wallace tried the treatment advanced by Murray. The 25 per cent. solution of magnesium sulphate was employed after sterilization. The dose was regulated by the body-weight of the individual patient, 1 c.c. being allowed for every 25 pounds of body-weight. A rough estimation of weight had to be made from height and bulk. The needle was introduced in the middle line between the third and fourth lumbar spines. In each case after injection an interval of freedom from convulsions ensued. In one case seven fits occurred during the seven and a half hours preceding injection, none during the subsequent seven hours. In the second case, six fits preceded the injection (three of them were severe), while none occurred during the following four hours. Case 1 was an ordinary one of eclampsia; the patient would probably have recovered in any case and the child might have been born alive. On the other hand Case 2 was a severe one and the outcome was doubtful. Wallace feels assured that but for the two intervals of four and four and a half hours, respectively, a dead child would have been born.

43. **Epithelial Proliferation Induced by Gasworks Tar.**—Watery extracts of blast-furnace and gasworks tar were mixed by Bayon and emulsified by shaking, in proportion of 1 in 4, with lanolin, which he had previously sterilized by heating for three days at 60 C. The watery extracts had also been sterilized in an identical fashion. Half a cubic centimeter of this mixture was injected, with aseptic precautions, into the subcutis of the ear of a young rabbit. Controls with lanolin alone were injected into the corresponding ear of each animal. The rabbits were killed after four weeks, and the nodules caused by the injection were fixed in 4 per cent. formaldehyd and imbedded in the usual way in paraffin. A microscopic examination of the specimens shows the following features:

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In the blast-furnace tar sections a clear space in the center of the field of view was filled by a homogeneous colloid or plasmatic liquid without any cellular admixture. There was no definite wall or connective tissue envelope such as generally would be found in a cyst, but the fluid seemed to be contained in an epithelial lining, which in parts was exceedingly thin, so as to consist of two or three layers of cells only. In places a slight proliferation had taken place, with the result that the epithelium was somewhat thicker, and they presented a ragged appearance due to a slight protrusion of epithelial plugs or knobs into the lumen of the cavity. In other places a slight congregation of small round cells with a deeply staining nucleus was visible on the margin of the epithelial ledge. But the amount of tissue reaction was in every case very minimal. A few and very small horny cell-nests were present, such as are produced by the incasing of epithelial cells of low vitality by the rapidly proliferating epithelium. These cell-nests were rare and small, and on the whole no marked difference could be detected when compared with the corresponding controls where lanolin alone had been injected.

On the other hand, the gasworks tar specimens presented quite another appearance. The cavity caused by the liquid lanolin injected was filled by cellular debris, several of which were unrecognizable, but others could be made out to be cast-off epithelial cells and leukocytes. The epithelium round the lanolin injected had abundantly proliferated so as to form a thick wall all around, from which epithelial plugs and protrusions took their origin. This was accompanied by a certain amount of round-celled infiltration. Epithelial cell-nests were both numerous and of considerable size, and presented the stratified appearance which is so distinctive in some cases of squamous-celled carcinoma of the body surface.

46. **New Form of Tuberculin (T.F.).**—In investigating this subject it was thought by Lyons that old tuberculin might contain some substance which produced a positive reaction, perhaps by irritation, on apparently healthy individuals, whose skin is not sensitized by the products of the tubercle bacillus, and if that substance were removed a positive reaction would more definitely indicate the presence of tuberculous disease. On adding to 10 c.c. of old tuberculin 60 c.c. of absolute alcohol a cloudiness appears in the solution, which on standing for twenty-four hours settles as a precipitate which clings to the sides of the vessel. The supernatant liquid is again precipitated with absolute alcohol and filtered. The precipitate from both precipitations is dissolved in 10 c.c. of distilled water. This solution is again precipitated and filtered; the filtrate obtained from this is added to the first filtrate, and the whole evaporated to its original bulk (10 c.c.) at a temperature of 56 C. The combined precipitates are dissolved in 10 c.c. of distilled water. The resulting solution contains the same amount of precipitate as the original 10 c.c. of old tuberculin.

The solution of the precipitate is diluted with distilled water to form a 10 per cent. solution. If now 1 minim of this 10 per cent. solution of the precipitate is injected under the horny layer of the skin, in three or four hours a small, raised, inflammatory area about half an inch in diameter appears around the site of injection in about 92 per cent. of all cases, both in tuberculous and apparently healthy individuals. This reaction, therefore, proves of no particular value in diagnosis. The filtrate which has been evaporated to its original bulk is now taken and diluted with distilled water to form a 10 per cent. solution. If 1 minim of this solution be injected under the horny layer of the skin, a raised inflammatory area appears round the site of injection in from twelve to eighteen hours in known tuberculous individuals; no postive reaction has been noted in persons apparently free from tuberculous disease, such individuals being likewise free, according to their clinical histories, from any suspicion of tuberculous affections.

In applying the 10 per cent. solution of the filtrate for diagnostic purposes the procedure is as follows: A small area of the skin of the forearm is cleaned with soap spirit and rendered tense, as one does when vaccinating; the point of a hypodermic needle is then inserted obliquely between the horny and Malpighian layers, the aperture of the needle being turned toward the surface. One minim of the solution is then injected; a control of distilled water is injected in the same way. On withdrawing the needle some of the injected fluid escapes and is removed on a piece of cotton-wool. No dressing is required.

A positive reaction is seen to be as follows: Around the site of injection a raised area of inflammation and induration appears in from twelve to eighteen hours. The inflammatory area in early cases of tuberculosis is usually nearly an inch in diameter, the edges gradually fading to normal skin. The area of induration is noted in the immediate vicinity of the needle prick. In more advanced cases the inflammatory area is smaller, usually about half an inch in diameter, the edges being more sharply defined. In these, too, the area of induration is well defined around the needle prick. In still more advanced cases the area of inflammation and induration is less well defined but recognizable, while in very advanced cases a reaction, if at all present, is only very slight. In early cases the reaction persists for three or four days, while in advanced cases it passes off in from twenty-four to forty-eight hours.

The test as described has up to the present been applied to 270 persons. Of these 191 were known to be suffering from tuberculous disease in various forms. Of these 191 tuberculous cases the reaction was positive in 186; the five tuberculous cases yielding a completely negative reaction were in the last stages of pulmonary tuberculosis and died within two weeks of the date of application of the test. In the remaining seventy-nine negative cases no reaction whatever was noted, and in these great care was taken to exclude the possibility of a tuberculous infection past or present. The reaction given by the filtrate has up to the present been found to have great value in assisting in the diagnosis of medical and surgical cases of tuberculosis, and especially so in cases of incipient phthisis otherwise in doubt.

A number of patients have been treated with the filtrate (for convenience termed T. F.), and so far the results have been very encouraging. The initial dose found to be most convenient is 0.001 c.c. This is increased every other day by from 0.0002 c.c. to 0.001 c.c. according to the reaction produced. It is easily borne and does not produce the untoward results so frequently given by other forms of tuberculin. The reactions by the patients are, as a rule, slight. There may be two hours after injection a slight rise of temperature, seldom more than 0.6 F., and this usually becomes normal in ten hours. In some cases for about two or three hours a slight headache or feeling of malaise or pain near the site of injection is complained of, and this usually completely disappears in a few hours. The remedy seems to have a beneficial effect on the temperature, which in about one-third of the patients treated was swinging and "hectic," became normal in a week, and remained so during the course of treatment. As a rule, over the site of the injection there appears a small swelling which passes off within twenty-four hours.

Medical Press and Circular, London

November 6, XCIV, No. 3825, pp. 477-504

48 Jaundice. W. L. Brown.
49 Injuries At or Near Ankle. J. J. Clarke.
50 Treatment of Psoriasis. Brocq and Simon.
51 Modern Combat Against Tuberculosis Among Children. Nietner.

November 13, XCIV, No. 3826, pp. 505-532

52 Early Symptoms of Tuberculous Meningitis. Hutinel.
53 Injuries At or Near Ankle. J. J. Clarke.
54 Hedonal as Anesthetic. H. de L. Crawford.
55 *Artificial Production of Pneumothorax in Phthisis by Injection of Nitrogen. H. Chitty.

November 20, XCIV, No. 3827, pp. 533-558

56 Neurology of Visual System. H. Campbell.
57 *Surgical Treatment of Sarcoma of Long Bones. F. Eve.
58 Perforated Duodenal Ulcer. J. W. Struthers.
59 Shock. F. G. Crookshank.

November 27, XCIV, No. 3828, pp. 559-588

60 Fever: Its Causes and Treatment. E. C. Hort.
61 Radium in Gynecologic Conditions. W. H. B. Aikins and F. C. Harrison.
62 Sketch of Development of Therapeutic Immunization. W. Boxwell.
63 Neurology of Visual System. H. Campbell.

December 4, XCIV, No. 3829, pp. 589-618

64 Some Therapeutic Points. H. French.
65 Neurology of Visual System. H. Campbell.
66 "Vitalism" in Practice of Medicine. J. O'Carroll.

55. **Artificial Production of Pneumothorax in Phthisis.**—The cases which Chitty considers as specially suitable for this treatment are: 1. Those in whom the disease is advanced on one side, while the opposite lung is unaffected, slightly affected, or quiescent. 2. Those in whom the temperature remains high in spite of the usual methods of treatment, and who show signs of auto-inoculation whenever they take any exercise. 3. Cases which are going downhill in spite of the usual methods of treatment. 4. Early unilateral cases for whom sanatorium treatment is not available. Especially does this apply to the bread-winner of the family. 5. Cases of severe recurrent hemoptysis. One is often in doubt as to which side is giving rise to the bleeding, but in these cases it would be quite justifiable to compress the worse lung, and, if this had no effect, then to aspirate the gas and repeat the operation on the other side. 6. Although most of the recorded cases have been patients suffering from chronic tuberculosis, yet this has not been by any means invariably so, and some cases of acute phthisis have been successfully dealth with.

57. **Treatment of Sarcoma of Long Bones.**—After detailing Coley's results and views as regarding the treatment of sarcoma of the long bones with his fluid, Eve quotes the results obtained at the London Hospital. In no instance had any improvement occurred in periosteal sarcoma of the long bones. As regards the prevention of recurrence by Coley's fluid, he states that of three of his own cases in which a striking diminution of the tumor had occurred under the toxins, and subsequently local removal had been performed; in two cases local recurrence took place, and in one metastasis. His present attitude is unfavorable to the employment of Coley's fluid in any case of operable sarcoma and even as a prophylactic against recurrence.

Practitioner, London

December, LXXXIX, No. 6, pp. 745-896

67 Sleepiness. F. Taylor.
68 Teaching of Operative Surgery. G. E. Herman.
69 Relation of Epilepsy to Insanity and Its Treatment. R. Jones.
70 Bacilluria and Pyuria. W. Wingrave.
71 Treatment and Pathology of Venereal Diseases as Seen To-Day. J. E. R. McDonagh.
72 Cases of Eye-Strain Simulating Grave Organic Disease of Central Nervous System. S. Stephenson.
73 Recent Advances in Dermatology. J. M. H. Macleod.
74 *Rest-Cures in Theory and Practice. H. C. Miller.
75 *Action of Iodin, and Also New Methods for Using. D. Curle.
76 *Common Cause of Cough. P. Hicks.
77 Case Illustrating Extreme Malignancy of Chondrosarcoma. H. J. Clarke.
78 Sub-Tertian Malarial Fever Complicating Pregnancy. J. C. Ryan.
79 Paratyphoid Infection. W. B. Russell and F. L. Wood.

74. **Rest-Cures in Theory and Practice.**—If an hysterical patient is treated as a neurasthenic, Miller says the results will be entirely transitory. If a neurasthenic is treated as a hysteric, there will probably be no results at all. If a patient with neurasthenia due to eye-strain goes through the orthodox Weir-Mitchell cure, he will improve rapidly at first, slowly toward the end, and instantly relapse when he resumes work; all because the basic factor of uncorrected astigmatism was ignored. All cases of toxic neurasthenia, Miller says, tend to improve on account chiefly of the massage.

75. **Iodin.**—In taking up the study of iodin, Curle's attention has chiefly been occupied with its use by means of ionization in the treatment of tuberculosis. In reviewing the results of this treatment, he says, the disappearance of pyrexin and delirium is remarkable, as also of pleural effusion, for in the pleuropneumonia cases potassium iodid with digitalis did no good. The improvement in the sputum is also remarkable. He does not feel inclined in every case of pleurisy or pneumonia to adopt the treatment unless ordinary treatment fails, as iodism, if it did occur under these circumstances, would add very much to the distress of the patient. Discriminately used, however, it seems to Curle as if it would reduce the mortality from these maladies. One advantage of the treatment is that in using iodid, closed phthisis is not likely to be overlooked in the examination of the sputum, and another worthy of note is the intestinal asepsis and clean tongue which follows its use. The use of the chlorin with the iodid, when properly conducted, does not seem to cause iodism more readily than when potassium iodid is given alone.

Curle has used the following method, combining ionization with the internal administration of potassium iodid, for over two years with a measure of success, which justifies further and more extensive trial. At 9 a. m., the patient (an adult) is given 25 grains potassium iodid and 5 grains potassium bicarbonate, in a copious draught of water. At 11 a. m., 1 p. m. and 3 p. m., the dose is repeated. At 4 p. m., with the patient resting in bed, ionization, as employed by Professor Leduc in the treatment of ankylosis, is carried out by means of plates of block tin, thin enough to bend into hollows, each having a surface of 20 square inches, under which are placed sixteen layers of lint, saturated with a warm 2 per cent. solution of potassium iodid. The plates having been placed in position so as to include the affected part, and held there by means of a suitable bandage, a current, controlled by a suitable regulator, with a milli-amperemeter in circuit, is passed through them, which, beginning at zero, is gradually increased to 100 m.p. and at the end of half an hour is gradually withdrawn. Before disconnecting the apparatus, and removing the plates, an interval of two or three minutes is allowed to elapse, as, if the circuit be broken immediately, the patient sometimes experiences disagreeable shocks, probably due to condensation. Curle has tried ionizations every alternate day, so as to keep the blood constantly charged with iodid, but found that this took too much out of the patient, and is apt to make the skin so tender that the full milli amperage cannot afterward be borne. The best results, he has found, were obtained when intervals of four to seven days were allowed, and in subsequent ionizations, the positions of the plates are so altered that in each ionization the current is directed from a different point through the affected parts. When the disease is extensive, the whole pulmonary surface is gone over in this way, and the most seriously affected parts repeatedly ionized. As by this method, ionization takes place from the potassium iodid introduced into the blood, through the walls of the blood-vessels into the tissues, as well as from the lint outside the skin, it offers a very decided advantage over the older method from the skin alone.

Curle has now given over 200 ionizations, and, with the exception of the praecordia, has applied the electrodes over every part of the thorax, and also over the anterior triangle of the neck, without any inconvenient results. With preliminary preparations, thirty minutes of current, and subsequent operations, each ionization takes up nearly an hour. He has now tried ionization on five patients suffering from pulmonary tuberculosis, and one suffering from lupus. In the first, fourth and fifth patients treated, there was hemorrhage and pleurisy before commencing treatment. There was no recurrence of hemorrhage under treatment, and the pleurisy disappeared with one or two ionizations.

76. **Cause of Cough.**—The condition referred to by Hicks is a dry pleurisy, affecting the layers of the pleura over the upper posterior surface of the lungs. Physically, the sign to be detected is a dry creaking, most common over the outer areas of the scapular regions, and elicited most easily in deep breathing. The extent and loudness of the friction naturally vary considerably; at times it exactly reproduces the creaking of leather; it never has the features of a soft friction rub; it is very rare over the extreme apices of the lungs. Its disappearance may be traced concurrently with the subsidence of the symptoms it produces. It is extremely apt to recur in successive seasons. Clinically, cough of this type is generally paroxysmal in character; the attacks are apt to be prolonged and exhausting; they give the impression of an "irritation" cough. The patient often wakes up in the night and coughs unceasingly for a long time, perhaps for two or three hours, before relief arrives; at times the paroxysms are quite uncontrollable, and they may even result in vomiting. In some cases the paroxysmal character is less marked, and the coughing is a more or less incessant dry "hack;" occasionally it is very noisy; it may be "barking," in some cases it is almost brassy in character. This latter condition is, perhaps, most common in boys. Rarely, there is even a suggestion of whoop-

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ing about the paroxysms. Expectoration is generally absent or very trivial; a severe paroxysm generally ends with the production of a little glairy mucus. Pain is generally absent, though some patients, especially in the more acute forms, are apt to complain of "rheumatism" about the shoulders. Pyrexia, slight in degree, is present only in acute cases; as a rule the temperature is quite unaffected.

This form of cough often supervenes on a common cold, and lasts for a long time. In practically every case the patient complains of a tickling in the throat, or behind the upper section of the sternum. Where the distress is acute enough to demand it, Hicks says nothing achieves benefit so quickly as a few poultices applied over the shoulders. The first application should contain a rather strong proportion of mustard, this being followed by ordinary linseed; speedy relief will invariably follow; and the nocturnal paroxysms may be often cut short in this way. In more chronic cases, friction over the affected areas with any strong liniment, or with capsolin, or with iodex, applied night and morning, is a suitable method of treatment. In dealing with delicate individuals, Hicks often orders to be worn for a few weeks over the shoulders a carefully-fitted pad of thermogene; this can be secured in position by tapes carried from behind over each side of the neck, which are met by and fastened to similar tapes coming up under the opposite axilla from the lower corners of the pad. For internal use, nothing gives such prompt relief as the following for an adult:

℞	Gm. or c.c.		
Liquoris morphinae acetatis ...	4		℥60
Acidi acetici dil.	1	33	℥20
Syrupi tolutani	16	or	℥iv
Aquae camphorae q. s. ..... ad	120		℥iv

M. S. One-half ounce as needed.

Archives des Maladies du Cœur, etc., Paris

November, V, No. 11, pp. 689-752

80 Paroxysmal Tachycardia. E. Savini.
81 The Murmurs of Mitral Insufficiency. (Les bruits de souffle circulaires de l'insuffisance mitrale.) M. Couto.
82 Epithelioma Inside Jugular Vein. (Sur une forme particulière d'épithélioma vasculaire.) R. Argaud.
83 Symmetrical Area of Purpura on Left and Zona on Right Arm. H. Gougerot and Thibaut.
84 Fragility of the Red Corpuscles. (A propos de la résistance des hématies normales et sensibilisées.) R. Hertz.

Archives Générales de Médecine, Paris

November, XCI, No. 11, pp. 965-1056

85 Compulsory Declaration of Tuberculosis. (Rapport sur la déclaration obligatoire de la tuberculose au nom de la Commission permanente de la tuberculose.) M. Letulle.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

November, I, No. 11, pp. 273-389

86 *Extra-Uterine Pregnancy at Term with Normal Child. (Grossesse extra-utérine opérée à terme au cours du travail avec enfant vivant.) A. Boquel.
87 *The Interreactions in Blood from Men and Women. (Les réactions intersexuelles du sang humain.) V. Le Lorier.
88 Viscosity of Blood in Relation to the Arterial Tension During Pregnancy and the Puerperium. P. Pellissier.
89 Operable Puerperal Phlebitis. C. Jeannin, Vanverts and Paucot.

86. Extra-Uterine Pregnancy at Term.—Boquel was able to distinguish the fetus through the abdominal wall evidently outside and on top of the uterus; the placenta was implanted on the fundus and just below. Except for threatening hemorrhage, the child, a well formed girl weighing over 6 pounds, was readily extracted. There had been no hemorrhage at any time during the course of the pregnancy. At first there had been frequent pains but they ceased as the pregnancy advanced and except that the patient tired a little more easily than usual and had some difficulty in walking, conditions seemed to be physiologic. Two or three weeks before actual labor there had been some brief pains suggesting the onset of labor but they were irregular and ineffectual. He has learned from this case and the records of others that it would be better to deliver the child by a median incision as term approaches, without waiting for actual labor, puncturing the membranes and extracting the child without pulling on the sac or cord. The placenta should be separated rapidly and completely after clamping the vessels. He approves of draining for forty-eight hours and, in any event, being prepared for emergencies of all kinds in an operation for extra-uterine pregnancy.

87. The Intersexual Reactions of Human Blood.—In Le Lorier's research he found that serum from a male agglutinated the blood-corpuscles from a pregnant woman and from another man in an average of 36 per cent. of the persons tested. The serum of a gravid woman agglutinated the corpuscles from a man or another pregnant woman in only 11.8 per cent. The agglutinating property is thus seen to differ in the sexes, but the red corpuscles in both sexes seem to behave exactly alike in respect to any given human serum. It is possible, he suggests, that this biologic difference between the male and the female albumins may be the cause of sterility in certain cases or of disturbances in the development of a pregnancy, either on the part of the mother or of the embryo.

Bulletin de l'Académie de Médecine, Paris

November 12, LXXVI, No. 38, pp. 377-419

90 Growth of Nerve Tissue Outside of the Organism. (Croissance des fibres nerveuses dans le milieu de culture, in vitro, des ganglions spinaux.) G. Marinesco and J. Minea.
91 *Transfusion of Blood; 81x Cases. H. Henrot.

91. Transfusion of Blood.—Henrot remarks that the accidents liable from anaphylaxis on reinjection of serum are not to be feared in injection of the whole blood, and he urges his French confrères not to let the Americans re-implant transfusion in France when French medicine already has a fine record in this line. The first of his six cases of transfusion of blood dates from 1876; it was done for uterine hemorrhage following retention of the placenta in a peculiarly malformed uterus. The patient was almost exsanguinated when 200 c.c. of blood drawn from a man with prominent veins was injected and the woman rapidly recovered. Henrot's experience with this and other obstetric cases indicates that the hemorrhage from abnormal implantation of the placenta on the cervix, with repeated losses of blood, is a more urgent indication for transfusion than the hemorrhage which accompanies directly the delivery. It seems as if the organism is able to make up at once for a sudden extensive loss of blood but that when the losses occur repeatedly the time comes when the blood-producing organs become exhausted and transfusion here is a life-saving measure. In his second case a girl under 14 with extreme chlorosis and uncontrollable uterine hemorrhage plus uncontrollable vomiting was saved by transfusion of 170 gm. of blood drawn from her father. There was no further hemorrhage. In a third case a man of 41, intensely debilitated from malaria and dropsy, was injected with 30 c.c. of blood from another man. The number of reds increased at once by 600,000 and by the end of six weeks the number was 1,890,000, while it had been only 1,082,000 before the transfusion. Seven weeks after the operation all signs of edema had disappeared and the previously bed-ridden patient was out of doors all the time, but the enlargement of the spleen still persisted, indicating that the patient was only improved, not cured. Faulty technic was responsible for the failure of the measure in the fourth case, the blood evidently having failed to enter the vein as supposed. The veins in these exsanguinated patients are so flabby and collapsed that it is a difficult matter to find and enter one properly. Transient benefit was obtained from the transfusion in a case of pernicious anemia but the progress of the disease was only temporarily arrested. In another case of pernicious anemia the patient was a tailor, 30 years old, and his blood was like water while the blood transfused was unusually concentrated. The donor was a robust girl cousin from the country, and the blood did not blend. Fatal pulmonary embolism followed in a few minutes. Henrot emphasizes that even a small amount of blood may do wonders. He never attempted to transfuse the blood directly but drew it into a Mathieu apparatus for the purpose, a funnel with graduated recipient and rubber-bulb attachment.

Lyon Médical, Lyons

November 17, XLIV, No. 46, pp. 809-856

92 Shriveling of the Thymus in Six Dogs Under Roentgen-Ray Exposures. (Action des rayons de Roentgen sur le thymus du chien.) C. Regaud and R. Cremieu.
93 Antimeningococcus Serum in Treatment of Gonorrheal Urethritis. R. Salle.

Presse Médicale, Paris

November 23, XX, No. 97, pp. 981-992

94 *Causes of Disturbances in the Artificial Menopause. T. Tuffier and A. Mauté.
95 Dialysis of Diabetic Urine. (Application de la dialyse à l'étude de l'indose organique urinaire chez les diabétiques.) H. Labbé and G. Vitry.
96 *Appendicectomy and Hernlotomy by the Inguinal Canal. (Appendicectomie et cure radicale de la hernie crurale.) E. Desmarest.

November 27, No. 98, pp. 993-1000

97 *Diagnosis Induced Diuresis. (Epreuve de la diurèse provoquée; polyurie expérimentale. Valeur séméiologique du rythme d'élimination urinaire de l'eau et des chlorures.) H. Vaquez and J. Cottet.

94. **Artificial Menopause.**—Tuffier and Mauté discuss the primary origin of the disturbances resulting from premature suppression of menstruation by operations on the ovaries, and state that their experimental and clinical experience and necropsy findings all demonstrate that ovarian treatment is of no use after the ovaries have been removed. It aims to stimulate the glands and can do no good if the glands are gone. Ovarian extract should be restricted to cases of obesity, chronic rheumatism or possibly exophthalmic goiter in which it may prove a useful adjuvant. The congestion and nervous disturbances of the artificial menopause are due to overfunctioning of the thyroid and adrenalin glands and treatment should aim to reduce their functioning within normal range. They have found antithyroid serum effectual to act on the thyroid while for adrenalin hyperfunctioning ipecac, sodium salicylate and opium have displayed efficacy. In a few special cases thyroid extract and epinephrin in small doses have seemed to reduce excessive functioning.

96. **Appendicectomy and Treatment of Femoral Hernia Through the Inguinal Canal.**—Desmarest reports three cases which confirm the advantage of the technic which permits a radical operation on a right femoral hernia and removal of the appendix at one time through an incision in the inguinal region and opening up of the inguinal canal.

97. **Induced Polyuria.**—Vaquez and Cottet expatiate on the important information to be derived from the delay in elimination of 600 c.c. of water taken on a fasting stomach. The method is simplicity itself, while it throws light on the disturbances induced in the kidneys by functioning of other organs. Diuresis occurring predominantly at night—nycturia—may be ascribed to reduced permeability of the kidneys from pathologic changes if the output of urine after the test 600 c.c. of water is scanty, whether the patient reclines or stands. The nycturia must be ascribed to causes outside the kidneys if the induced polyuria is normal while the patient reclines but becomes scanty as he gets up. The rhythm of the diuresis is an important element in the diagnosis. At 6:30 a. m. the patient drinks the 600 c.c. of the mild mineral water (Evian) which Vaquez always uses for the test, and the urine for twenty-four hours is separately collected for the periods 7 to 9 a. m.; 9 a. m. to 9 p. m., and 9 p. m. to 7 a. m. The test period 7 to 9 a. m. should be passed reclining at one time, and at another time the patient should rise at 7 a. m. The preceding day no fluid should be taken after breakfast except 400 c.c. at noon and at supper. The findings as to amount, specific gravity and urea and chlorid content are recorded for each of the three portions separately, corresponding to the above three periods. Some typical findings are tabulated to show the information that may be thus obtained. In a normal person the three portions were respectively: night, 350 c.c.; 7 to 9 a. m., 500 c.c.; 9 a. m. to 9 p. m., 700 c.c., with a specific gravity of 1.022; 1.005 and 1.018; chlorids to the liter, 7.69, 2.77 and 8.5; urea to the liter, 18.59, 0.71 and 10. The corresponding figures in a case of renal sclerosis with albuminuria and high blood-pressure were 1.500 c.c.; 70 c.c. and 400 c.c.; 1.007, 1.011 and 1.013; 2.08, 2.63 and 0.99 and 3.55, 1.57 and 17.87.

Revue de Chirurgie, Paris

November, XXXII, No. 11, pp. 857-868

98 *Traumatic Ossifying Muscle Disease. (Pathogénie et traitement des myostéomes traumatiques.) A. Lapointe.
99 Sporothrix Synovitis. (Synovite sporotrichosique.) H. Gougerot and G. Lévi-Frankel.
100 Fracture of the Ankle. (A propos du troisième fragment tibial dans les fractures malléolaires.) Vaillet.

98. **Traumatic Ossification of Muscle.**—Lapointe gives the radiograms of a case in which a large myosteoma was removed from the muscle of the thigh. Sixty-six days after the accident the experiences in this case, as in others on record which he reviews, show that the myosteoma developed from ossification of the connective tissue of a contused muscle. Conservative treatment is unreliable although the ossifying process has retrogressed enough to permit satisfactory functioning in some cases. The preferable technic, however, is to take the growth out six or eight weeks after the trauma if the myositis is not complicated with ossifying periarthritis. This combination is particularly frequent, following dislocation and spraining of the elbow. Removal of the myosteoma is of little use in such a case. Orthopedic resection should be applied for persisting serious infirmity. The muscular and bone tissue surrounding the myosteoma should be spared injury as much as possible.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

November, VII No. 11, pp. 617-688

101 *Operative Treatment of Pelvic Phlebitis. (Les phlébites utéro-pelviennes et leur traitement chirurgical.) J. Vanverts and H. Paucot.
102 Sterility in Relation to Defects in Development of the Uterus. (La stérilité dans ses rapports avec les anomalies de développement de l'utérus.) L. Funck-Brentano and E. Plauchu.

101. **Operative Treatment of Pelvic Phlebitis.**—Vanverts and Paucot tabulate the details of eighty-two cases of operative treatment of puerperal thrombosis, with recovery in thirty-three cases, as reported by twenty-six writers. Lenhartz and Bumm each have reported eight cases, including four recoveries. Study of the tabulated details suggests that uteropelvic phlebitis requires treatment to prevent escape of emboli and transmission of infectious products through the veins, while the original phlebitic focus should be directly attacked. In practice, however, the former is the most important and the original focus may sometimes be left untouched. If the veins can be ligated above the thrombosis this should be done, and if there is suppuration in the vein or an abscess in the broad ligament, the abdominal incision can be closed and the purulent focus opened and drained by extraperitoneal access, either through the vagina or through an incision above Poupart's ligament. If the pelvis shows no signs of suppuration or there is merely slight infiltration along the vein, it may not be necessary to attack the focus directly. If symptoms of suppuration in the broad ligament develop a few days later, the focus can be opened then below the peritoneum.

Semaine Médicale, Paris

November 27, XXXII, No. 48, pp. 565-576

103 Puerperal Lesions in Uterine Adnexa and Broad Ligament. (Annexites et lymphangites du bord supérieur du ligament large.) R. de Bovis.

December 4, No. 49, pp. 577-588

104 The Argyll Robertson Sign in Non-Syphilitic Disease. F. Rose.

Berliner klinische Wochenschrift

December 2, XLIX, No. 49, pp. 2297-2344

105 Decline in the Birth-Rate and Means to Combat It. (Der Geburtenrückgang und seine Bekämpfung.) J. Wolf.
106 Changes in the Electric Responses in Muscle with Diseases of Various Organs. (Ueber Veränderungen der elektrischen Reizbarkeit der Muskeln bei Erkrankung verschiedener Organe.) R. Bálint and E. Egan.
107 Radium and Mesothorium Treatment of Tumors. (Anwendung des Radiums und des Mesothoriums bei Geschwülsten.) A. Stickel.
108 Duration of Therapeutic Action of Thorium X. J. Plesch.
109 Roentgenotherapy in Gynecology. (Kritische Bemerkungen zur Therapie von Frauenleiden mit Röntgenstrahlen.) M. Cohn.
110 Action of Serum on the Toxins of Aqueous Extracts of Organs. (Wirkung des Serums auf die wässerigen Organextraktgifte.) H. Dold.
111 Vaccine Treatment. (Die Erfolge und Misserfolge der Vaccinationstherapie.) G. Wolfsohn.
112 The Sanatorium in Preventing the Spread of Tuberculosis. (Verminderung der Möglichkeit der tuberkulösen Infektion durch die Heilstätten.) H. Ulrici.

Correspondenz-Blatt für Schweizer Aerzte, Basel

November 20, XLII, No. 33, pp. 1257-1288

113 Deported Tissue Cells as Possible Source of Cancer. (Die körpereigenen Gewebstransspositionen als Ursache des Krebses im Lichte der modernen Immunitätslehre.) J. Gwerder-Pedoja.

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114 *Epidemic Poliomyelitis in Switzerland. (Zur Epidemiologie und Therapie der epidemischen akuten Kinderlähmung.) F. Brandenberg.

114. Epidemic Poliomyelitis.—Brandenberg reports a small epidemic of poliomyelitis in Switzerland, nineteen in the Basel district and twenty-four in Eastern Switzerland. In the latter group the cases occurred along the road between Roschach and Winterthur but with intervals of months. In one family a small child had it in 1909 and another child in 1912. The ages of the children were from 2 months to 11 years.

Deutsche medizinische Wochenschrift, Berlin

November 28, XXXVIII, No. 48, pp. 2249-2296

115 *Psoriasis. (Behandlung der Schuppenflechte.) A. Jungmann.
116 *Protective Ferments. (Ausblicke über die Verwertbarkeit der Ergebnisse neuerer Forschungen auf dem Gebiete des Zellstoffwechsels zur Lösung von Fragstellungen auf dem Gebiete der Pathologie des Nervensystems.) E. Abderhalden.
117 *Traumatic Neuroses. (Unfallneurosen und die Mitwirkung des Arztes bei ihrer Bekämpfung.) E. Schultze. Commenced in No. 47.
118 Manometer Findings in the Jugular Vein. (Nachträge zur Manometerwirkung der Jugularvene.) R. Ohm.
119 *Improved Tecanic for Inhalation. (Ein neues Inhalationssystem.) E. Mayrhofer.
120 Improved Technic for Local Anesthesia. (Verminderung der Novokainkonzentration durch Kaliumsulfat bei der Lokalanästhesie.) A. Hoffmann and M. Kochmann.
121 Typhoid in Rabbits. E. Haller and E. Ungermann.
122 *How Long Are Typhoid Patients Capable of Transmitting Infection? E. Schumacher.
123 Structure of Thrombi. H. Ribbert.
124 Catalase Content of Liver and Blood with Mouse Cancer. (Untersuchungen über den Katalasegehalt der Leber und des Blutes bei Krebsmäusen.) E. Rosenthal.
125 Efficacy of Atropin in Certain Cases of Tinnitus. S. Weissenberg.

115. **Psoriasis.**—Jungmann remarks that we have a number of measures at our disposal which may influence this affection and heal it up temporarily, but that nothing is known to date which will eradicate the tendency to new eruptions. Dieting is important, aiming to change the metabolism; local measures are liable to prove more effectual in the overcorpulent after an anti-obesity course. Arsenic is the main reliance among drugs, followed at a long distance by iodids and thyroid treatment. Among the local measures the Roentgen rays take a prominent place although—like all other local measures—they are not always effectual. If no benefit is apparent after two or three exposures, this method had better be dropped; as a rule a mild eruption gradually subsides after a single exposure. In case of recurrence a course of roentgenotherapy should never be given in less than a year after the first series.

116. **Protective Ferments and the Pathology of the Nervous System.**—Aberhalden recapitulates the results of his research on the importance of the ferments in the blood as a sign of the presence of alien substances. There are ferments not only for proteolysis, but for fats, phosphatids, nucleoproteids, carbohydrates, etc. The proteolytic ferments are the ones that have been best studied to date, both by the dialyzing and optic methods. They are proving useful not only in diagnosis but they suggest possible therapeutic progress by treating patients with serum from individuals who have large amounts of the protective ferments or possibly by finding means to rouse the organism from its torpor and start it to producing its own ferment, or possibly the serum from animals might be used which had been treated beforehand to immobilize the protective ferments. These ideas seem promising as already the method has proved useful in the diagnosis of pregnancy and often in that of cancer and it opens new outlooks for study of the pathology of the nervous system. He urges the collecting of data, saying that science throws out its nets in every direction, hoping now and then to catch something that will advance progress.

117. **Traumatic Neuroses.**—Schultze presents an important contribution to this subject which has acquired so much practical interest in Germany. He reviews among others his own certificates as to the results of traumatic injury compared with the outcome of the cases years later. The psychic shock is often responsible for the glycosuria noted soon after the accident but disappearing later. The pallor is too often ascribed to anemia, and many phenomena such as exaggeration of the reflexes, reduction of the sensation of pain, etc., which are often cited in the certificate, are within the physiologic range. Lead-poisoning is often responsible for a neuritis which has led to misapprehension of the results of the accident, as also flat-foot and alcoholism. As the years have passed he has become more and more conservative in the amount of damage credited to the accident itself. He makes a point of never giving a certificate to the patient himself; the harm done by such private certificates far outvalues any possible good from them.

119. **Improved Technic for Inhalation.**—Mayrhofer has found that salt melted can be applied to the air passages in a remarkably fine spray and this dry spray has been applied in thirty cases of bronchitis or laryngeal tuberculosis with fine results. The hot, dry air, the pharmacologic action of the salt which penetrates with the air into the lungs and the chemical action of the minute salt crystals which induce an intensive osmotic action are all important factors in the benefit derived.

122. **Duration of Infectiousness in Typhoid.**—Schumacher discusses how long a typhoid patient shelters the germs after recovery, exclusive of the chronic carriers. In ten cases in a recent epidemic of thirty or forty cases the infection must have occurred a few weeks after the individual was supposed to be entirely free from typhoid bacilli.

Medizinische Klinik, Berlin

December 1, VIII, No. 48, pp. 1931-1974

126 *Hypophysis Tumors and Aniposity. (Ueber Adipositas cerebralis und Adipositas cerebrogenitalis.) R. v. Jaksch.
127 *Habitual Constipation. (Torpor recti—Dyschezie.) G. Singer.
128 Blunders to be Avoided in Treatment of Lupus. (Wie soll man den Lupus nicht behandeln?) A. Jungmann.
129 Local Anesthesia. (Ueber einige neuere Anästhesierungsverfahren, mit bes. Berücksichtigung der Plexusanästhesie.) K. Siebert.
130 Influence of Internal Secretion on the Mind. (Einfluss der inneren Sekretion auf die Psyche.) L. v. Frankl-Hochwart.
131 *Paraffin in Treatment of Wounds. F. Auerbach.

126. **Adiposity of Cerebral Origin.**—Von Jaksch reviews our knowledge in regard to the action of the hypophysis cerebri on the development of abnormal adipose tissue and sexual characteristics. He reports four cases to show this connection. The first patient was a man of 51, who had a tumor in the hypophysis but no symptoms of acromegaly. His weight is much above normal. The first signs of the tumor had been noted ten years before; change in the sexual characteristics became evident two years later. The man refuses to permit any operation although very fine results are on record after even merely partial operations on hypophysis tumors. The second patient was a boy of 14, with several congenital deformities, who had had meningitis at the age of 3, leaving hydrocephalus. The latter had led to disturbances in the hypophysis and as the boy grew his body assumed more and more the feminine type, until at 14 he was a typical specimen of what may be called cerebrogenital adiposity. The third patient, a man of 26, presented much the same syndrome consecutive likewise to hydrocephalus left by meningitis. The fourth patient was a man of 31 with symptoms of syringomyelia for the last twelve years, and for the last three the tendency to obesity characteristic of a hypophysis tumor; but the sexual apparatus persisted normal.

127. **Constipation from Torpid Rectum.**—Singer concludes his remarks on the subject by commending very small enemas, morning and evening, not of glycerin, which he considers too irritating, but of plain water or warm oil or chamomile tea. Still more effectual is a small enema of fluid paraffin. The coat of paraffin protects the mucosa, loosens up incrustations and prevents the stool from becoming too dry.

131. **Paraffin in the Treatment of Wounds.**—Auerbach extols the advantages of applying fluid paraffin freely to protect the skin all around a focus of suppuration, the last thing before the dressings are applied. The paraffin not only protects the skin against irritation from oozing, thus warding off inflammation and eczema, but it keeps the dressings from sticking.

St. Petersburger medizinische Zeitschrift

November 14, XXXVII, No. 21, pp. 311-325

132 Alcohol and the Nervous System. H. Hirsch.
133 Alcohol from the Standpoint of the Individual and of Society. v. Engelhardt.

Wiener klinische Wochenschrift, Vienna

November 21, XXV, No. 47, pp. 1857-1896

134 *Roentgen Ray-Treated Spleen Extract in Treatment of Tuberculosis. (Die therapeutische Wirkung der mit Röntgenstrahlen vorbehandelten Milz bei Tuberkulose.) W. J. van Stockum.

135 Purin Bases in the Blood. (Ueber den Purinstoffgehalt des Blutes und seine Bestimmung.) R. Bass and W. Wiechowski.

136 Gynecologic Reflex Mental Disease. (Meine Ansichten über die reflektorischen Psychopathien und die Notwendigkeit der Verbesserung des Irrenwesens.) L. M. Bossi.

137 Promotion of Breast Nursing. (Ueber Stillschwierigkeiten und deren Behandlung.) H. Beer.

138 Starch Days in Diabetic Dietary. (Mehltage bei Diabetes.) N. Roth.

134. **Roentgenized Spleen Extract.**—Van Stockum has been studying for five years the action of the Roentgen rays on tissues, having become convinced that the rays induce some chemical change in sound tissues which results in the formation of a new substance which has a destructive action in turn on pathologic tissue. The conclusion followed that this new substance might be generated artificially in tissues and be used in treatment of cancer and tuberculosis. If his hypothesis is correct, then injection of the tissues subjected to the action of the Roentgen rays would have a destructive action on local pathologic processes. When small animals succumb to exposure to the Roentgen rays, the morbid changes found predominate in the skin, blood and spleen. The spleen is the one organ which seems to escape cancer most. Experiments with beef spleen gave negative results, but a remarkable effect was observed when scraps of spleen tissue were implanted in the subcutaneous tissue and the region of the implants then exposed to the Roentgen rays. In April, 1910, he treated in this way a man of 26 with multiple suppurating glandular tuberculosis, another man with ulcerative tuberculosis of the entire large intestine, and a man of 21 with tuberculous hip-joint and pulmonary disease. The results were a surprisingly prompt and permanent subsidence of all the symptoms, but in some other patients the progress of the more advanced tuberculosis was only temporarily arrested. The implanting of the spleen tissue is a disagreeable procedure, and he has been experimenting since with extracts of spleen tissue previously exposed to the Roentgen rays, and he thinks that this method has a future. His experience with 3,000 such injections has confirmed the harmlessness of the method while a marked turn for the better was apparent from the first, he says, especially in cases of surgical tuberculosis.

Zentralblatt für Chirurgie, Leipsic

November 23, XXXIX, No. 47, pp. 1601-1632

139 Improved Technic for Suturing Stump of Stomach or Intestines. (Eine einfache Verschlussnaht des Magendarmrohres.) A. Baron. (Die Kreuzverschlussnaht in der Magendarmchirurgie.) C. Pochhammer.

Zentralblatt für Gynäkologie, Leipsic

November 23, XXXVI, No. 47, pp. 1569-1600

140 *Action of Roentgen Rays on Uterine Cancer. E. Bumm.

141 Active or Expectant Treatment of Eclampsia? Lichtenstein.

142 Development of New-Born Infants. (Die körperliche Entwicklung des Neugeborenen.) R. Lutz.

140. **Action of Roentgen Rays on Uterine Cancer.**—Bumm reports a case which shows that the Roentgen rays can be applied through the vagina to an inoperable uterine cancer, and, without injuring the vaginal mucosa, induce such sclerosis in the surrounding connective tissue and muscles that the cancer was unable to spread farther. After the sloughing off of masses of cancerous tissue, a clean cavity was left, and there was no more suppuration or hemorrhage. At this stage the growth was operable and it was accordingly successfully removed. Although the clinical course of the case was so striking, yet the microscope revealed that the cancer cells proper had not been killed by the exposures, no specific influence on them being apparent. Their growth had been checked merely by the barrier thrown up around them by the hardening of the encircling soft parts. The exposures were given every day or so for two months, a total of 800 units or 1,600 Kienböck x units.

Zentralblatt für innere Medizin, Leipsic

November 23, XXXIII, No. 47, pp. 1165-1188

143 Chemical Tests of Serous Fluids with Uranium Acetate. (Eiweisbestimmung und Reststickstoffbestimmung des Blutes und seröser Flüssigkeiten mittels Uranilazetat.) A. Oszacki.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 16, XXXIII, No. 139, pp. 1457-1464

144 Immunizing Action of Autolysates of the Skin of Animals Yielding Vaccine. (Immunizzazione con la cute infetta di vaiolo bovino autolizzata.) E. L. Tocco.

November 24, No. 149, pp. 1465-1472

145 Modern Methods of Sputum Examination. (Dei nuovi metodi di ricerca dei bacilli di Koch nell'espettorato.) C. Gamna.

Policlinico, Rome

November 24, XIX, No. 48, pp. 1741-1776

146 Varices in the Pharynx. (Una forma di disturbo subiettivo della faringe.) T. Mancioli.

November, No. 11, Surgical Section, pp. 481-528

147 Lymph-Node Extract in Immunization Against Tuberculosis. (Sull'importanza funzionale delle glandole linfatiche e su talune proprieta degli estratti di glandole tubercolari.) G. Perez.

148 Invagination for Intestine Deprived of Its Mesentery. (Proposta di trattamento dell'intestino privato del suo mesenterio coll'invaginazione.) S. Marinacci.

149 Experimental Research on Surgery of the Hypophysis Cerebri. A. Chiasserini.

Riforma Medica, Naples

November 16, XXVIII, No. 46, pp. 1261-1288

150 Nature of the Cammidge Reaction. P. F. Zuccola.

151 Pathogenesis of Epilepsy. A. Dellepiane.

152 Development of Cancer Cells. (Sui mitocondri delle cellule blastomatose.) C. D. Martelli.

Brazil-Medico, Rio de Janeiro

November 1, XXVI, No. 41, pp. 429-438

153 New Species of Amblyomma. (Nota sobre os Ixodidas colleccionados nos Estados de Goyaz e Matto Grosso pelo Dr. Murillo de Campos.) H. B. Aragão.

Semana Medica, Buenos Aires

October 31, XIX, No. 44, pp. 869-932

154 Attempts to Induce Abortion in Extra-Uterine Pregnancy. A. P. Ramos.

155 Chemical Study of South American Plant: Capparis Tweediana Eich. (Contribucion al estudio de la corteza de la raiz de meloncillo.) M. Faulin.

156 Importance of General Measures in Treatment of Local Tuberculous Processes. (Transcendencia clinica de las tuberculosis locales.) D. S. G. Hurtado.

Hospitalstidende, Copenhagen

November 13, LV, No. 46, pp. 1329-1364

157 Superior Reliability of Subcutaneous Tuberculin Test for Adults. (Sammenlignende Undersøgelser over subkutane Tuberkulininjektioners og kvantitative Kutanreaktioners diagnostike Værdi.) J. Ostenfeld and G. E. Permin.

158 Serodiagnosis of Syphilis. (Herman and Perutz' Syfilisreaktion udført i 16 Tilfælde paa Sindssygehospitalet ved Middelfart.) A. Ipsen and H. Helweg.

November 20, No. 47, pp. 1365-1420

159 Origin of Glaucoma. II. (Videre Undersøgelser over det hæmostatiske Glaukoms Patogenese. Om en Klapvirkning af Sinoskleralpladen som Aarsag til hæmostatisk Glaukom.) C. F. Heerfordt.

Ugeskrift for Læger, Copenhagen

November 21, LXXIV, No. 47, pp. 1711-1776

160 *Paralysis of Ocular Muscles in Children. (Nogle Tilfælde af erhvervede Øjenmuskelparalyser hos Børn: Heine-Medin's Sygdom.) K. K. K. Lundsgaard.

161 Therapeutic Application of Absorbed Light Rays. (Behandling af Lupus vulgaris og Lupus erythematosus med absorberet Lysenergi.) T. Brinch. See THE JOURNAL, 1912, lix, 1586.

160. **Paralysis of Ocular Muscles in Young Children.**—The five cases reported by Lundsgaard were encountered at a time when epidemic poliomyelitis was prevailing, and he regards the paralysis as secondary to this disease, as it had developed after a few days of malaise or brief mild febrile illness, disregarded at the time or called "influenza" by the family. Poliomyelitis was suspected only in one of the cases, and this only from the fact that a family which had recently lost a child from poliomyelitis had moved into the building. During the six months in question, June-November, 1911, from three to ninety-one cases of poliomyelitis had been declared in Denmark, thirty-three of which occurred in Copenhagen. In each of the above cases the external rectus was totally paralyzed and in four of the cases there has been no change to date. In the fifth case there was ptosis of both eyelids and the movements of the eyeballs were restricted, but the ocular symptoms completely subsided in a week or so. The assumption of an incomplete form of epidemic poliomyelitis seems the only plausible explanation of the paralysis of the ocular muscles in these cases. These incomplete forms of the disease are particularly important from the epidemiologic standpoint.

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